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ORIGINAL ARTICLES.

THE TECHNIQUE OF OPERATIONS FOR CANCER OF THE BREAST.

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I do not feel that apology need be made for introducing to the society for discussion, the subject embodied in the foregoing title; the widespread and increasing prevalence of cancer of the breast,[1] its painful and terrifying features, and, above all, the very great attendant mortality, render it one of the most important of surgical conditions and one in which the most strenuous effort should be made to cure, and when cure be impossible, to ameliorate. The views which I have the honor of laying before you are based on some fifty operations in my own hospital and private practice. These operations have been done under modern methods and nearly all the cases have been followed from year to year. You will, therefore, pardon me if my observations are largely personal, and if I quote but little from other writers.

With the causes of cancer in general, we are as yet unfamiliar. Heredity bears but a slight relation, predisposition and trauma are still indefinite. The parasitic theory has of late years had zealous advocates and equally positive negations. At best it remains unproved. Discussion of this, however, is without the scope of this paper. So, as well, of the diagnosis but little need be said. A persistent lump, be it large or small, in the breast of any woman, young or old, is a matter demanding the most careful consideration. It may be cystic or solid. This will be determined by the exploring syringe. If it be solid, its malignancy can often be accurately determined only by incision. In those at or beyond middle life, a solid tumor is generally cancer. In girls, while the chances are quite in favor of adenoma or fibroma, a sarcoma may be found. In patients between the ages of 20 and 35, any of these forms may be encountered. I have more than once seen cancer of the breast in a woman under 30 years.[2]

So, in general, whatever be the age, the earlier our diagnosis be made accurate, the better it will be for the patient.

Operations for cancer of the breast are designed to be curative or are merely palliative, and it is needless to say that the end in view is determined by the extent of the neoplasm. Whatever this may be, the preparation of the patient is practically the same. The bowels are well moved on the day preceding the operation, the chest, axilla and arm well scrubbed with soap and water and thoroughly shaved and a green soap poultice applied to the region of the incision and the surrounding parts. This is left on over night. On the morning of the operation the green soap is removed, the parts scrubbed with a 1 to 1,000 sublimate solution and a compress wet in this applied and left in place until the patient is under ether. If there be an ulcerated area it may be covered with iodoform gauze and collodion, or it may be touched with the thermo-cautery after the patient is anesthetized. The assistant who is to give the anesthetic should prepare his hands as though he were to participate actively in the operation itself, and should wear a sterilized gown. Care should be taken to see that the ether cone is cleanly.[3] The best table is one of medium height, with the chest and head piece moderately elevated.

Let us assume, if you please, that the left breast is the seat of operation and that the tumor is of moderate size, not adherent to the chest wall and not in the periphery of the gland. The arm is abducted to beyond 90 degrees and held by an assistant or nurse. The skin incision must be ample, well distant from the supposed margin of the growth. It is of advantage in placing this incision to make light cuts in the skin for landmarks. One at the inner angle of the incision (which will be at about the middle of the inner, lower quadrant), one in the axilla at the lower border of the tendon of the pectoralis major, and one each at the middle of the breast above and below.

These landmarks are of distinct advantage, for when the tissues are placed on the stretch in cutting, it is difficult to estimate the amount of retraction which has been made.

This upper cut goes well through the skin and subcutaneous fat; at the outer upper margin of the growth it swings down below the pectoral tendon and is prolonged to beyond the middle of the axilla. An assistant pulls up the inner flap and it is well dissected from the chest toward the median line. The knife then cuts toward the ribs, well into or through the costal portion of the pectoralis major, and a part or the whole of this muscle is raised, with a few deep strokes, from the chest wall. The surgeon's left hand, grasping the breast and lifting it, makes this easy.

At times a few vessels may require forcé pressure, often a sterilized towel crowded into the wound and firmly pressed down by an assistant will check oozing. The lower incision is then made, the lower, outer flap dissected up and the breast and underlying muscular tissue cut from the chest, the pectoral tendon

[1] Bryant, New York Medical Record, Jan. 19, 1895.

[2] I would like, here, to record the opinion that cancer is much more frequent in the third decade than is generally supposed. I have seen cancer of the rectum, uterus, lip, breast and stomach in patients under 30.

[3] The physician's hands and the cone are so near the field of operation. In one of my suppurative cases I felt that I could trace infection to this assistant.

severed and the mass left hanging by the fatty tissue beneath and below the pectoralis major. These fatty tissues are then carefully divided from the chest wall from above downward and outward toward the axilla. The axillary vein is exposed by cutting through overlying fascia. This is best accomplished by slipping a blade of a medium, blunt, curved scissors beneath the fascia and cutting from within outward. The vein should be exposed for some two inches or more, the fascia and fat carefully dissected from it. The tributary veins should be clamped before cut, otherwise they retract and ooze in a troublesome way. If involved lymphatic glands be adherent to the vein it (the vein) may be resected. I have not seen more than temporary edema follow this.

The entire axillary space is to be thoroughly cleared of the structures crossing it, the subscapular veins should be spared, the subscapular artery will not generally require ligation. The apex of the axilla and the space of Mohrenheim are to be carefully investigated and the contained fat and fascia removed. Finally, the entire mass of fat and glands is cut away from the serratus and latissimus muscles.

All bleeding is to be carefully checked and the wound closed. If the tumor be small the edges of the chest flaps can generally be approximated. If, however, it is large there will be a gap of large or small dimensions left. Here, in certain instances, the sliding flap method of Shrady will avail. In other cases lead plates with relaxation sutures will bring the flaps together as nearly as possible, and blood-clot (Schede) closure be obtained under strips of rubber tissue. Secondary skin grafting (Thiersch) may be done in eight or ten days.[4]

For sutures I prefer the silkworm gut, interrupted and not too closely placed. An axillary drain may be inserted or omitted. My recent cases have healed promptly without drain and under a single dressing. The ideal dressing is plain sterilized gauze. A mass of this crowds the fornix of the axilla well up, and the entire dressing is firmly and evenly held in place by broad strips of rubber plaster. A mass of sterilized absorbent cotton envelops the chest, with an ordinary binder over all. The arm is outside this and loosely fixed at the side.

The foregoing description applies to an ordinary case, in which the tumor is not large, say the size of a pigeon's egg, centrally placed and not adherent. It is needless to say that varying conditions demand essential modification in technique. If the cancerous mass be no larger than a plum and not extending to the under surface of the gland it suffices, I think, to remove the pectoralis fascia and leave the muscle. If the tumor be peripheral a corresponding amount of tissue must be removed in its vicinity. When the tumor extends to the base of the mamma, the greater pectoral must be excised, and it is worthy of note that two experienced observers, Halsted[5] and W. Meyer,[6] have recently advised that it be removed in all instances. Each of these surgeons has carefully devised a definite operation for the removal of both of the pectoral muscles, the former surgeon removing them in part, the latter *in toto*. Halsted reports fifty cases in which he has done this, which he calls the "complete" operation; and with the magnificent resources of the Johns Hopkins Hospital at his command we might well expect definite and extensive histologic reports of the involvement or freedom from invasion of the muscles, lymphatics, fascia, fat and other tissues. Such details are, however, lacking in the reports of his cases, and we must at present consider the proposition of theoretic value, though most certainly having the advantage of thoroughness and the wide removal of surrounding tissues. It is of interest to note that Halsted does not find this addition to increase the risk of the operation, and his patients regained excellent use of the arm in retaining the clavicular portion of the greater pectoral. I have repeatedly removed a large part of the muscle and have never seen resulting disability. As to the most important point in this proposition of Halsted and Meyer, the ultimate cure of the patient, we must await further report. For of Halsted's cases 75 per cent. have been done within the past three years (the generally accepted limit of "cure") and the remainder have but an average (22 per cent.) of freedom from relapse. Meyers' procedure is more radical, but he has had opportunity to apply it in but one or two recent cases. We shall await with much interest further reports on the all important question of radical cure.

The axilla must, in all cases, be invaded and thoroughly cleared out. This is a position universally accepted, which admits of no debate. It makes no difference whether glands be felt therein before operation. I have repeatedly found small, cancerous lymphatics in an axilla which seemed normal on palpation. The axillary dissection must be thorough and carried to the highest possible point. So, as well, it is of the greatest importance that the tissues between the breast and axilla, the fascia, fat and contained lymphatics be removed in a single mass.[7] It is useless to say that the cases in which the axilla is not involved are those in which the prognosis is the best. Invasion of the high axillary glands makes it almost certain that there are involved lymphatics beyond reach. And I have been led, also, to expect speedy recurrence in those cases in which the axillary fat has a sandy, granular feel. Halsted advises in every case the excision of the supra-clavicular glands. This adds but a few moments to the length of the operation and one can but regard it as of material value.

Throughout the entire procedure, active assistance is of the greatest importance. All bleeding vessels should be promptly seized, the retraction should be intelligently made, especially when the axilla is the field of work. It is of distinct advantage to make the proper flaps at the first cuts, for if they require revision time will be lost in checking the accompanying hemorrhage. A "dry" wound is the best assurance of prompt healing.

In those unfortunate cases in which the disease is too far advanced to permit thought of mere palliation, operation is justifiable whenever it is felt that life may be prolonged and the comfort of the patient enhanced thereby. In such instances the operation may be modified to suit the requirements of the individual case. Our rule in regard to these palliative procedures should be a simple one; to act as the best interests of the patient demand.

As has been said, these cases may be put up with or without drainage. In my latest cases, in which I have operated in the dry, aseptic way, I have been able to dispense with drains. Unless there be some indication for change the first dressing may be left

[4] In general I have found this preferable to primary grafting.
[5] Annals Surgery, November, 1894.
[6] N. Y. Med. Record, Dec. 15, 1894.
[7] All incisions outside the cancerous tissue.

until the sixth or eighth day, at which time the silkworm stitches are removed. From this time on, the patient is encouraged in the use of the forearm and arm. The functions return in due time and I have never seen permanent disability in patients in whom the axillary fornix had been crowded well up.

The immediate prognosis in the modern operation for cancer of the breast is good. I have myself had some fifty operations without a post-operative death. Halsted reports seventy-six cases without mortality, Weir over one hundred. In general, the death rate is 2 or 3 per cent. As regards the most important feature, the ultimate result, statistics are steadily improving. The most important contribution to this, in fact the most valuable article on cancer of the breast, which has yet appeared, is the recent paper by Bull.[8] This surgeon reports 118 personal cases, of which he traced to the end 115, or all but three. The exceptional value of these data will be appreciated when we realize that all of these cases were carefully and conscientiously followed from month to month. A large proportion of them were seen by me and examined every three or six months.

In case of death, the statements of the attending physician were obtained as to the cause. Patients who lived at a distance were regularly examined by the family physician, and his report noted from time to time in the history.

Bull's cases are properly divided into two classes: 1, those operated upon during the past three years; and 2, those previous to that time. Of these the second class alone are utilized as to ultimate results, seventy-five in number. And of these seventy-five cases, twenty or 26.6 per cent. are living, free from recurrence, at periods varying from three years nine months to ten years after operation. That is, 26.6 per cent. of all cases may be classed as "cured." This is, as Bull says: "A higher proportion of cures than has been previously reported."

Bull's statistics might, however, mislead us in concluding that the prognosis is less favorable than it really is, for his cases include those in which the operation was palliative, as well as those in which the disease was yet in an early stage. So, in this way, Bull finds on dividing his cases, that those in which the axillary glands were free from invasion show over 50 per cent. of three year cures.

I, myself, in my last year's work at the New York Cancer Hospital, divided my operable cases into three classes, as follows:[9]

1. Those in which the disease is so limited that it is thought reasonably probable that it is entirely excised and that the patient has a fair prospect of cure.

2. Those cases in which the surgeon is doubtful, after removal, whether he has gone beyond the limits of invaded tissue; and,

3. Cases frankly incurable, in which a palliative operation affords a fair prospect of adding to the life and comfort of the patient.

It is needless to say that no sharp dividing lines can be drawn. One places an individual case in its approximate class after he has operated, and after he has read the detailed report of the pathologist.

It would be quite as irrational to include all cases of pulmonary tuberculosis in one class, both incipient and advanced, and to say that the percentage of cures is thus and so, as to pursue a like course in cancer. An adherent breast cancer the size of a cocoanut is one thing, a nodule no larger than a robin's egg is quite another matter; and it is obviously unfair to allow the latter to bear the recurrence percentage of the former.

The histologic examination of the parts removed is of the greatest importance and should be made in a most thorough manner. No specimen can be certified as cancer until the microscope has so proved it, and it is not sufficient to make a perfunctory examination of a piece of the tumor itself. Segregated glands should be carefully examined, especially those lying highest in the axilla. It has been my custom to mark certain outlying portions of the breast, skin, muscle, fasciæ, glands, etc., for special report by the pathologist, and he should note the amount of healthy tissue intervening between the tumor itself and the cut surface of the parts removed. In this way alone, may we be reasonably assured that we have gone beyond the confines of the growth, and in this way, as well, may we compare with the original history of the case the development of recurrent nodules.

Our responsibility in these cases of mammary cancer does not end with the simple removal of the growth. The patients are to be placed under the best hygienic conditions and are to be followed carefully from year to year. My own rule has been to instruct them to return for thorough examination every three months, and in the interim, if they find evidence of suspicious nodules. The more intelligent class of people will, as a rule, see the necessity for this and gladly comply. The poorer classes will often fail to return and must be looked up in their homes. As an evidence of the thoroughness with which this can be done, I may again refer you to Bull's list of 118 cases in which 115 were kept under constant observation to the end. Internal recurrence admits of no relief. Local nodules may, however, be removed from time to time, and while in general the prognosis in recurrent cases is unfavorable, yet we may often add to the comfort of the patient and at times achieve a lasting cure.

As an example of the value of this frequent revision I may cite the case of a woman of 46 years who was in one of my wards at the Cancer Hospital in May last. Bull had removed the right breast of the patient for cancer some four years previously. A year later Weir excised an extensive scar recurrence. Something like a year after this, I removed the opposite breast and axillary contents for a cancerous nodule, the size of a robin's egg, and have since excised small nodules on four different occasions from the scar of the right side. Her general health has not yet suffered and she is able to support herself and children. It is now over four years since her original operation, and but for the fact that she has been watched constantly, she would doubtless have died long since.

I purposely omit more than the briefest mention of the use of erysipelas injections in malignant growths. In sarcoma the method seems deserving of the most extended trial. In carcinoma we have practically no evidence that it is of value.

I can but class these operations for cancer of the breast as among the most important with which we have to do in surgery; not that they are in themselves dangerous, but that the best chance for cure requires the exercise of mature judgment. And in

[8] N. Y. Med. Record, Aug. 25, 1894.
[9] N. Y. Medical Jour., September, 1894. 'I use the word "doubtful" in its broadest sense. It is needless to say that one never feels certain.

conclusion, I beg to express the view that mammary cancer is a curable disease, and that the keynote to its successful management is to be found in the earliest possible diagnosis, prompt and wide excision and careful observation of the patient during the remainder of her life.

Stedman Block.

RELATIONS OF DISEASE, CRIME AND VICE.

Read before the Omaha Medical Society, Dec. 11, 1894.

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I would define these terms by saying that disease is the violation of any physiologic law or any abnormal activity in living tissue. Crime is the violation of any human law, or any abnormal activity in the civil world. Vice is the violation of any moral law, or any abnormal activity in the moral world.

We have to-day in the United States more than one hundred thousand tramps who find it easier to get a living by begging from door to door than by labor, and hence take to this sort of life.

There are more than five hundred thousand criminals in this land to-day and only one-fifth of them are behind the bars. It is estimated that two women out of every one hundred in this country are fallen women. The percentage of divorces to marriages is alarmingly great so that in some States there is one divorce granted to every twelve marriage licenses issued. Ten thousand children roam the streets of Chicago homeless and without suitable food, clothing, shelter or guardianship. While this appears to be a very large number it is probably not greater than will obtain elsewhere.

Although it is impossible to get at statistics upon the frequency of criminal abortions, yet so prevalent is it even in the so-called "better" classes of society that in some quarters a great cry has justly been raised against it in which every physician should join, for he alone has any adequate conception of its frequency and disastrous results, morally and physically.

By sentimentalists and would-be reformers it has of late become quite common, and especially since the "Keeley cure" and "Christian science" fakes, to hear it affirmed that alcoholism or drunkenness is a disease and the victims are irresponsible for their acts. Thus morphinism, cocainism and allied disorders are placed in the same category, and heredity is very properly given a prominent part in their production.

T. D. Crothers, of Hartford, a recognized authority, estimates that there are in the United States 1,600,000 excessive drinkers besides a large number of victims to morphin, chloral, cocain and other narcotic drugs. He says: "Alcohol used either in moderation or excess, always deranges sensation and the brain centers, which receive and determine the value of the impressions. False impressions come from the senses and the brain is unable to correct them. Associated with this the delusion of mental health, and clear accurate judgment of his conditions and surroundings. This condition is present in every drinking man, only different in degree. . . . The criminal acts of the inebriate spring from this confusion of sense and judgment. This shows the irresponsibility of inebriates."

Dr. L. D. Mason, of Brooklyn says: "The large majority of inebriates become so from necessity, not from choice, there being a *vis a tergo* of heredity, environment and disease that produces physical degeneracy and plunges them into drunkenness."

Wilson, of Edinburgh, says: "Drunkenness is the outcome of an ill-organized constitution."

Two noted French medical authorities in a report to the Government Hygienic Committee give the opinion that, "alcoholism is now a social danger, undermining the bodily and mental health of posterity, and that from its injurious influence on the children and ulterior descendants of the habitual consumer, a degeneration of the whole nation is being induced."

The large increase of drinkers among women both in this country and England is a cause for serious alarm. Lawson Tait says: "An educated and intelligent woman never becomes a drunkard but from some deep-rooted and often carefully concealed cause. The indulgence may be from physical suffering or mental distress." He holds that many of his cases of suffering from inflammatory affections of the uterine appendages have been cured of these habits by the treatment which cured their physical suffering.

Dr. F. O. Marsh, of Cincinnati, in a paper read before the Miami Valley Medical Society upon morphinism said: "The deviation from the normal standard of nerve nutrition and nerve function resulting therefrom, and which impels to and necessitates the continuance of morphin is a disease. . . . The moral responsibility of the patient at any given time for the continuance of the habit diminishes in direct proportion as the nerve degeneration has become deep-seated and inveterate."

Dr. Norman Kerr, of London, says: "The permanent impairments of the nervous system in inebriety are described as phases of alcoholic dissolution, a retrogressive pathologic process. In the etiology of alcoholic nerve degeneration there are two elements, viz., the effects of the direct pathologic action of alcohol on the newer tissues, and of the impoverished blood supply. These are chiefly the breaking down of the nerve elements, with thickness and inelasticity of the blood vessels and overgrowth of the connective tissue. The gradual appearance and development of an appetite for excessive drink often indicates brain degeneration."

Dr. B. Clark, of New York, in speaking of alcoholism says: "It is responsible for over one-half of the sum total of human miseries." Again he says: "It is a disease that can be managed much more readily than imagined and yet a disease which few physicians know how to handle when called upon to do so."

Henry O'Neill, of Belfast, cites among police cases, the fining of a woman 10s. for drunkenness who had been convicted of the same offense ninety-two times. Another woman fined 10s. whose previous record was 140 convictions, and still another fined 20s. who had been before the court on a like charge 170 times. He then states that nearly all the highest penal records had been of women and draws the conclusion that fines and punishment are failures as reformatory measures. Therefore it is said: "It is inevitable that drunkenness is a disease, not a crime. In German, Austrian, Swiss, Italian and Dutch law, there is a

distinction between culpable and inculpable intoxication. English laws generally exact complete responsibility. In Austria a peasant farmer while intoxicated, killed his brother. In Britain he would have been hung, or, at least have received a very long term of imprisonment. Under the Austrian code provision of a reduction of punishment in the non-intent of intoxication, he served nine months imprisonment, became a changed man, and headed a temperance reformation in his district, where a monument has been erected to commemorate his great service to his country." Precisely the same kind of sentimental foolishness advocated by some Americans. So much, Mr. President, for drunkenness and its allied affections.

Dr. Hunter McGuire, of Virginia, in writing to Dr. Lydston, of Chicago, requesting a "scientific explanation of the sexual perversion of the negro of the present day," says: "Before the late war between the States, a rape by a negro of a white woman was almost unknown; now the newspapers tell us how common it is. In the South the negro is deteriorating, morally and physically. . . . During the days of slavery, insanity was very uncommon among the negro race. Now, our large asylums are not capacious enough to hold the insane negroes of both sexes." He then refers to their lack of proper food, shelter and clothing as compared with their former supply and says further: "We have also intemperance excess and impure air from overcrowding. . . . Mental depression and anxiety are also common. Laughter and music, universal with them before the war, are now rarely heard. . . . Pulmonary phthisis and other purely tubercular diseases, while common enough in the mulatto, were comparatively infrequent in the negro. Now, however, . . . tuberculosis is fearfully common."

In his reply, Dr. Lydston very properly remarks: "Notwithstanding the horrible crimes perpetrated under the influence of the *furor sexualis* by the negro, particularly in the South, I believe that he compares quite favorably as regards sexual impulses—taking all abnormalities into consideration—with the white race. The more I see of white men in so-called refined society, the more contempt I have for quite a large proportion of male humanity."

Now, as to some of the reasons he offers as explanatory to the questions propounded let me cite a few:

1. "Hereditary influences descending from the uncivilized ancestors of our negroes."

2. "The removal of certain inhibitions placed upon the negro by the conditions which slavery imposed upon him."

3. "An incapacity of appreciation of the dire results to himself of sexual crimes."

Again he says: "The enormous increase of the negro since the war has had much to do with his physical and intellectual degeneracy, and therefore with his criminal propensities. As man descends in the scale of differentiation the number of offspring at a birth approximates the multiple pregnancies of the lower strata of animal life. Morel, De Monteyel, Hagen and one of our most eminent American writers —Kiernan—have conclusively shown that multiple pregnancies are most frequent among the degenerate types of humanity. The offspring in such multiple pregnancies are defective from an obvious double cause. Upon them, all degrading influences act with greater power." Once more he says: "The lack of systematic occupation and the forced assumption of responsibilities for which he was by nature and training unfit—to say nothing of the acquirement of vices and profligate indulgences for which he had relatively few opportunities while he was in bondage, and for which he was directly responsible to those whose interest it was to keep him in the best possible condition morally and physically." Finally he speaks some ringing words which I wish might be burned indelibly into the minds of all men but especially medical gentlemen: "Ignorance of sexual physiology has led the average white boy, at the age of puberty, to believe that fornication is a necessity, or at least a luxury at which the whole world winks. You well know the train of misery following the indoctrination of such ideas. This fallacious idea is responsible for much of prostitution and sexual crime. . . . Sentimentality and morals aside, the most materialistic of us must acknowledge that sexual purity is wholesome in its effects. The remedy for the evils of youth and early manhood is, never to begin indulgences that create physical and injurious necessities."

The Chicago *Inter-Ocean* said: "Out of thirty-two young men in New York City who were recently examined for West Point cadetship, only nine were accepted as physically sound. Such a note might well make the young men of our cities pause for a moment's thought. Beer, the cigarette, too much amusement, and the hidden vices are making havoc with the physical manhood of all our towns and cities." Dio Lewis said: "This species of indulgence is well nigh universal, and as it is the source of all other forms—the fountain from which the external vices spring, I am surprised to find how little has been said about it."

Dr. J. D. Bond, of Cincinnati, well says: "If the progenitors of our boys practice unrestrained licentiousness in wedlock, the transmission of lust is as sure as though the prostitution were not sanctioned by law. . . . Any doctor who recommends prostitution to cure masturbation is ready to damn two souls to save one body and deserves to be hooted in his community."

Dr. Percy, in the President's address before the Military Tract Medical Association, said that the most prolific source of prostitution is, "Ignorance of things sexual on the part of all mankind," and held the medical profession correctly responsible in large part for this marvelous ignorance. In the same address he said: "The vast majority of legalized marriages the world over, but especially in America, are nothing more or less than legalized prostitution. . . . Is it any wonder then that the offspring of such unions become weak passionate creatures, a prey to all sorts of nervous ailments, and that sexually they show no stability of character? Is it strange that the product of such wedlock often becomes prostitutes and the employers of them?"

A physician speaking of the vices of young men says: "Let us also warn the unhappy victims of follies that are past undoing to improve the means of restoration while there is still hope. In its track we find the ravages of loathsome disease, physical, mental and moral degradation, disrupted homes, asylums filled with imbeciles and graves that have kindly thrown the mantle of oblivion over wasted lives." So much for licentiousness. Let us now refer briefly to heredity and crime in general:

In a little work entitled, "The Jukes," R. L. Dugdale reports that in seven generations a single abandoned home bequeathed to the world 1,200 descendants, a large majority of whom were idiots, imbeciles, drunkards, lunatics, paupers, prostitutes and criminals. Seven hundred and nine of the 1,200 have been registered and their history studied in Mr. Dugdale's work. He finds that while harlotry in the community at large averages nearly two out of every hundred women, it was over twenty-nine times more frequent among the Juke women. In the line of Ada Juke, better known as Margaret, the mother of criminals, it was found that crime among the men was thirty times greater than that in the community in general. Of the 535 children born, nearly 24 per cent. were illegitimate. Among the women of the Juke family, the number of paupers was seven and one-half times, and among the men nine times greater than in the community at large. Among the sick and disabled of both sexes, nearly 57 per cent. were paupers. . . . Summing up the crimes and pauperism of this single family, Mr. Dugdale estimates that in seventy-five years it cost the public over $1,250,000, without reckoning the cash paid for whisky, or taking into account the establishment of pauperism and crime of the survivors in succeeding generations, and the incurable disease, idiocy and insanity arising out of this debauchery and reaching farther than we can calculate."

Dr. Van Fleet, in a paper read before the New York Academy of Medicine said: "In carefully looking over the ground, we find that we can divide the causes of crime into two groups, namely, the moral and the physical. They are so dependent upon each other and both so important that we find our thoughts constantly drifting backward and forward between the two." He says again in speaking of defective vision in certain criminal classes: "To them things are never as they seem; they think the whole world is wrong. They become criminals from necessity."

Dr. Bayard Holmes, of Chicago, in a paper read before the American Academy of Medicine said: "Only a very small number of physical defects, such as blindness and deafness, can be referred to heredity, but this is not the case with mental defects, or with those forms of mental incapacity which result in delinquency or criminality. Thus we find that the insane are, in a very large per cent. found in families in which the taint is hereditary." Again he says: "It seems to me that the medical profession ought to bring an indictment against that method of doing business which keeps one-fourth of our men idle all the time, all of our men idle one-sixth of the time, all men at work long hours when at work at all, and still puts into factories and shops children and women. It is the settled policy of capital to have at hand a large body of idle starving workmen. . . . From this condition of warfare in business, from the idle workers necessary to wage-slavery results our great burden of voluntary and involuntary able-bodied dependents. Of the criminal class 45 per cent. are essential criminals or criminals from defect. The criminals have increased in the United States from 1850 to 1890 over 400 per cent., while the population has increased only 180 per cent. . . . There is every reason to believe . . . that the great increment in crime during the past forty years has come through unjust and unethical laws and their inhuman administration, and through the production of a large class of landless, homeless, and generally idle people through the natural evolution of society."

The late Dr. O. W. Holmes seemed to recognize the influence of heredity, especially in the moral world, for once upon being asked when the training of a child should begin, he replied: "A hundred years before he is born."

Superintendent Byrnes, of the New York Police Department, says: "I know that children of criminals are very apt to become criminals themselves."

It is hardly necessary for me to call your attention in detail to the evils following cancer, tuberculosis, syphilis and gonorrhea, for all physicians know only too well the dire results to homes, wives and children and therefore to the State of these diseases.

Now while I am ready to admit, as every intelligent medical man must admit, that disease and numerous hereditary defects may and do follow the drink, morphin, chloral, cocain and other evil habits, yet it is not true in general that these habits depend upon some internal *vis a tergo* over which the victims have no control, and that they necessarily become such victims and are therefore irresponsible for their conditions. This teaching I believe to be highly unscientific and immoral. The gentlemen who have drawn such conclusions have in my opinion been illogical in the extreme and their data do not warrant their opinions.

If, according to these gentlemen, every drinking man is diseased in a greater or less degree and therefore more or less unaccountable for his acts, and if the criminal is such from necessity, surely we are a people in a deplorable condition, for at least 90 per cent. of our adult male population drink in some degree, and they together with our entire criminal population can have little or no moral responsibility for what they do. But they are accountable; they can quit their drinking and control their appetites; they can refrain from crime and they do so under circumstances which prove the truth of the assertion. Why, in the matter of drink, it is well known that many, of their own free will, give up their cups never to return to them. Multitudes more by simply embracing Christianity stop *at once* their drink habits and criminal practices, but you never hear of the multitudes being immediately cured of smallpox, scarlet fever, tuberculosis or puerperal fever by such treatment.

The trouble is with these drinkers and criminals, in the main, that the rewards for reformation and the punishment for persistence in their evil courses is not sufficient to bring into play their will power. Now, accepting the facts furnished by the gentlemen from whom I have freely quoted, although in some instances drawing different inferences from those facts, allow me to present what I believe to be the legitimate conclusion of these facts, many of which may be confirmed by every physician in his own experience:

1. Inheritance, ignorance and idleness are fruitful sources of disease, crime and vice.

2. Poverty, overwork and slavery to corporations is a fruitful source of disease, crime and vice.

3. Every human being is entitled to a home, proper food, clothing, education and employment together with his earnings; failing to secure which he becomes a criminal and vicious in cases too numerous to mention; therefore it is the duty of the State to secure to her citizens these things.

4. Ovariotomy and testiotomy should be done for

sexual crimes, insanity and some other constitutional diseases and upon the incorrigibly vicious.

5. Physicians should teach the serious effects morally, mentally and physically of masturbation, licentiousness, prevention of conception, abortion, the drink and allied habits, both upon the victims and their posterity.

6. There is no question but parents transmit to their offspring tendencies to disease, crime and vice.

REFRACTION IN SCHOOLS.

Read before the Minnesota Academy of Medicine, Feb. 6, 1895.

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This is an age of prevention rather than of cure. The greatest efforts are being made to cure disease before disease occurs. Can anything more distinctly exemplify the disinterestedness of the physician than his earnest and unremitting efforts towards prophylactic medicine? Reflect for a moment upon the discovery of vaccination for smallpox, and the villification endured by its progenitors and advocates. Note the active work accomplished by the medical profession in all questions involving sanitary reform and hygiene. Observe the earnestness of scientists as they endeavor to prevent the existence of diphtheria, tuberculosis, cholera, etc., by laboriously exhausting their very lives over the microscope and test tube. No one can affirm but that the existence of disease is more profitable to the physician than its dissipation; and yet the proudest member of our profession is he who discovers a prophylactic rather than a curative measure.

Along this line of thought, one of the greatest reforms may be indicated in anything that establishes and preserves the health of the coming generation. The present generation is launched for good or for evil, and while relief to its necessities is most urgent, it surely can not compare with procedures calculated to produce in our descendants a race of people strong and vigorous in mind, body and heart. It is for this now well-recognized principle that wise and thoughtful philanthropists are engaging with accumulating energy, in the establishment of kindergartens, Sabbath and mission schools, gymnasiums, etc. They recognize the superlative importance of early training, and that the most efficient method of dealing with ignorance, vice and disease, is to emancipate the race from their existence.

The paramount importance of proper and well-regulated school-life becomes, therefore, clearly apparent, and educators should appreciate that in the sacred and responsible position occupied by them, it is their duty to carefully guard the body as well as the mind of the youthful generation intrusted to their charge.

Without doubt, many of the most distressing diseases incident to human existence can trace their origin to the school life of the sufferer. Admitting that such pathologic changes are not invariably the primary and direct offspring of improper school existence, but may be the result of the submission of an already vitiated and hereditarily changed constitution to improperly constructed and badly managed school buildings and school life, we can not, even then, as citizens, advisers and educators, shirk the responsibility. The tendency of modern civilization leads toward education and progress, and such development should be encouraged. Such advantages are shared by rich and poor, by young and old, by the healthy and by the sickly, by those whose ancestors were blessed with vigorous minds and bodies, and by those who can only gaze retrospectively at a line of antecedents cursed by the presence of dissipation and disease.

Admitting the existence and operation of a law requiring a proper medical certificate before admission can be obtained to the school, there would still be a large percentage of scholars apparently healthy, but burdened by unfortunate inherited tendencies, capable of development under improper and vitiated circumstances. The responsibility of the present to the coming generation regarding school life is, therefore, enormous, and involves such questions as the location of school buildings, with regard to air, space and drainage; the construction of the building itself with regard to window space and the direction of light; proper ventilation, plumbing and drainage; the necessity for good and sufficient artificial illumination; the tendency towards overcrowding; the necessity for medical sanction before admittance to schools may be obtained; the use of proper drinking water; the providing of separate basins, towels and soap—which is an unquestioned source of contagion, especially of an ocular nature—the construction of desks of different sizes for different ages, so that the pupil may firmly plant his feet on the floor, and always occupy the same relative position to his desk; the construction of desks that are of the proper slant and height, and compel an upright position of the body in reading and writing, thus lessening the tendency to a contracted chest and distorted spine, which are prime factors in the production of consumption and spinal disease; the frequent intermission from studies and the change from one study and occupation to another, thus compelling a combined rest of eyes, mind and body; the proper regulation of the *means* of study, such as the distances and color of blackboards, the color of slates, the character of print and the paper upon which it is printed; the necessity for vaccination; the exclusion of contagious diseases, and the execution of advisable quarantine regulations and proper rules or laws, intended to exercise a beneficent care over the sight and eyes of the rising generation; these and many other subjects pertinent to the matter under discussion must appeal to the consciences of those having under their control the health and morals of these embryo men and women in whose hands must shortly be placed the future of our country. The scope of this article must necessarily preclude the possibility of even a casual discussion of most of these subjects, and the writer is, therefore compelled to limit his remarks to observations pertinent to the eye, and the pressure exerted upon it, by modern school existence.

The deleterious influence of education and intellectual advancement, upon the human organism can not be questioned. Not that knowledge invariably goes hand in hand with physical retrogression; but uneducated and untutored races are always superior types of bodily development, to those nations renowned for an insatiable appetite for knowledge.

The eye is no exception to the principle involved in this statement. The eyes of a people engaged in rural and pastoral occupations will demonstrate few,

if any, errors of refraction; and in races of a barbaric or semi-barbaric nature such pathologic conditions may be said to be positively unknown.

Ramas, who made an examination of 2,000 Mexican school children, found only 88 myopics, 60 hypermetropics and 10 astigmatics. He asserts that *pure* Mexicans rarely show *any* errors of refraction, and such deviations are almost invariably found in the mixed races. Compare this for a moment with the statistics of the German Empire, the home of the most highly intellectual people in the world. The most advanced seats of learning show that 50 per cent. of the pupils are afflicted with myopia, to say nothing of hypermetropia and astigmatism; and as if this were not enough, one school in Vienna produces 75 per cent. of myopic youths!

Unquestionably, therefore, school life is disastrously prolific of refractive errors, and should be controlled with every means possible by those having such matters in charge; and while it can not be denied that myopia is found much more frequently than hypermetropia and astigmatism, still the existence of the latter conditions must not be ignored, for they often enact an important function in the health and character formation of the scholar.

Still, from the very nature of myopia, and the possibility of its extreme development under adverse circumstances, combined with its influence on heredity, it becomes inevitably the most potential factor in the consideration of the matter under discussion.

Statistics on this subject are enormous, as from the time of Cohn's investigations in the Breslau schools in 1865–66 to the present time, more than two hundred thousand pupils have been examined by competent observers, for statistical purposes. These investigations have occurred in all civilized countries, under all circumstances of age, sex, race, cranial formation, health, heredity, intellectual advancement, and school architecture and management. Many of them have followed a certain number of pupils from class to class and from school to school. They all point to one inevitable conclusion, viz., that mental culture is obtained at the sacrifice of ocular perfection, and that such imperfections are usually myopic in their nature.

It is unnecessary to detail the reports of individual investigators, it being sufficient to remember that such men as Cohn, Jäger, Rüte, Erismann, Loring, Derby, Agnew, Risley, Hippel, Schmidt-Rimpler and many others of equal eminence, have contributed their time and ability to this work. Neither can additional investigation materially influence the consensus of opinion on the subject.

Certain facts have thus become established, and as they can not be further proved, our duty lies clearly in the line of an earnest and concerted effort tending toward, at least, a material mitigation of an existing evil. These facts may be briefly mentioned as follows:

The human eye at birth is normally decidedly hypermetropic. Herman, who examined the refraction of 110 children at about the age of 3 months, found them all hypermetropic without exception. Some deviations from these statements are recorded by observers who have detected myopia in very young infants by the ophthalmoscope; such instances are however, exceptional, and while doubtless true, immaterial.

The eye which shows hypermetropia in later life probably never reaches the emmetropic line; but the eye which develops myopia, gradually assumes a condition of emmetropia, from which point its axis is elongated by circumstances of heredity, health and occupation.

The claim that myopia is entirely an acquired disease can hardly be substantiated, when we reflect upon the many instances, observed by all ophthalmologists, where myopia will run from father or mother to every child in the family; such cases can not be coincidences, neither can they result from certain peculiar environments. Dr. Matais, of Angers, France, examined the families of 330 young myopic subjects, and arrived at the following conclusions:

1. The hereditary influence of myopia is manifest.
2. It exists in 216 out of 330 families.
3. Hereditary myopia is characterized by its early appearance, its comparatively rapid development and the high average of its degree.
4. Myopia is transmitted from the father to the daughter 86 times out of 100, and by the mother to the son 79 times out of 100.

The same author believes myopia to be inherited in 65 per cent. of all cases, and claims that hereditary myopia is more sharply defined than the acquired form, and that it reaches a higher degree more rapidly, and complications are more frequent.

Dr. M. Kirchner, of Germany, who has made exhaustive researches on the subject, says that children are most liable to be near-sighted when both parents are myopic, less liable when the mother only is affected, and least so when the father is the source of transmission. Boys of myopic parentage are twice, and girls four times, as strongly inclined to myopia, as the offspring of non-myopic parents. He thinks that girls are a trifle more inclined to myopia than boys.

Schwabe believes that the highest degrees of myopia can invariably be traced to heredity.

M. Francesque Sarcy, the well-known French critic, whose intelligence and veracity can not be questioned, even though he is not a member of the medical profession, has some interesting personal experience which he reports in pleasing and picturesque language. He begins: "I was born near-sighted, dreadfully near-sighted; many physicians assert that persons are never born near-sighted, but only become so. Science may say what it pleases; I was born myopic. One day, prompted by a spirit of mischief, I got hold of the big silver spectacles which my father wore and clapped them on. Fifty years have passed since then, but the sensation I experienced is keen and thrilling to this day. I gave a cry of astonishment and joy. Up to that moment, I had seen the leafy dome above me only as a thick green cloth, through which no ray of sunlight ever fell; now, oh, wonder and delight! I saw that in this dome were many little brilliant chinks; that it was made of myriad separate and distinct leaves, through whose interstices the sunshine sifted, imparting to their greenery a thousand forms of light and shade. But what amazed me most, what enchanted me so that I can not speak of it to this day without emotion, was that I saw suddenly, between the leaves, and far, far away beyond them, little glimpses of the bright blue sky. I clapped my hands in ecstasy, and was mad with astonishment and delight."

Sarcy undoubtedly had congenital myopia, and in later life he became blind in both eyes. In one he

suffered a retinal detachment, and in the other a cataract. The latter eye was operated upon, and he acquired better sight in it than ever before.

The existence, therefore, of absolutely direct congenital myopia while rare, can hardly be doubted; and the frequent transmission of an inherited tendency in the tissues of the eye, only requiring favorable circumstances for development, is so evident that argument is scarcely necessary.

The question of the influence of race and nationality upon the development of myopia is one of some importance, and has engaged the attention of scientists for many years, but has not yet reached a satisfactory settlement.

There *is* greater proneness to myopia in some races than others, but such tendencies can usually be traced to greater intellectual advancement, which is indicative of greater eye strain. Cohn, for instance, when he examined the Constantinople schools found very little myopia, owing to the small amount of writing accomplished by the scholars, and the manner in which it was performed. The contrast between the eye of the Oriental youth and the German (where the percentage of myopia is easily 50 or 60 per cent. and in extreme instances, 75 per cent.) is, therefore, very marked; but the probability is that it is due *not* to nativity *per se*, or cranial formation, as claimed by Stilling (who argues that a low-broad orbit favors the development of myopia) but to indolence, inappreciation of intellectual advancement and mental and moral perversity on the one hand, and entirely opposite qualities on the other. The claim of Stilling can hardly be maintained in view of the fact that Pymska, of Dorpat, Russia, carefully examined 338 scholars, mostly of Esthic nationality, and found only 17 per cent. of myopes. Since these people have broad faces and low orbits, and the proportion of myopes is less than in the inhabitants of western Europe, Stilling's theory can not be correct. Pymska feels that the development of myopia depends on the demands made upon the eyes by modern civilization, and not upon the form of the cranium.

It has been claimed that the Jewish race is more prolific in myopia than others. There seems to be no valid ground for this assumption, other than can be found in the fact that Jewish vocations, the world over, are usually those of shop-keepers, money-changers, etc., which necessitates close application to books and textures. In countries where the great mass of inhabitants turn to open air employment, and where the Jew naturally gravitates towards commercial life, no surprise need be experienced if examination of scholars shows a wide discrepancy in the development of myopia; but proof fails to demonstrate the same variance where Jew and Christian are reared alike, and where inherited tendencies from one generation to another can be estimated upon a basis of similarity.

Dor claims that "the further south you go, the more normal eyes you find." This statement may not be exactly correct, and has been the subject of debate; still, when it is observed that in countries approaching the equator, where life becomes progressively indolent, application nears a minimum, the noon-day and other siestas are frequent and general keenness and intelligence are lacking, it becomes easy to believe that our Southern friends may more nearly approach a condition of emmetropia than those who reside further north.

Callan, of New York, examined 457 negro children, varying from 5 to 9 years of age. In the lower schools only about 1.5 per cent. were myopic and in the higher, about 3.5 per cent. making the average about 2.5 per cent. In the primary, he found no myopia.

Fox has examined the scholars of the Indian schools of Carlisle, and found only an average of 2 per cent. of myopia. Examinations have been made in various countries, such as North and South America, the British Isles, Germany, France, Switzerland, Russia, Italy, the Caucasian and Oriental countries, Norway and Sweden, Roumania, etc. The result of these investigations may be stated, in the language of Cohn, to be that "in the whole civilized world, in all nations, the number of the short-sighted increases with the demands which their school work makes, and from class to class."

The percentage of school myopes in our own country, perhaps, does not exceed an average of 25 per cent., but it is constantly increasing to correspond with the requirements of our advancing civilization. This comparative myopic infrequency need not, however, detract from national pride, when reflection is made upon the polyglot character of our citizens. Undoubtedly, statistics taken from native born Americans would increase the percentage, and perhaps enable the egotistical enthusiast of our soil to refute the statement that there is on the earth a more studious and intelligent race of people than in the land where the eagle flaps its wings, and the starry flag waves majestically in the wind.

The coincident occurrence of advance in classes and myopia is exceedingly interesting and instructive combined, as it is, with a diminishing hyperopia in almost exactly reverse proportions. In this connection I can not refrain from quoting the figures of Erismann who, in 1871, examined 4,368 St. Petersburg scholars. They are as follows:

Class	1.	2.	3.	4.	5.	6.	7.	9.	10.
Myopia	13.6	15.8	22.4	30.7	38.4	41.3	42.	49.8	41.7
Hyperopia	67.8	55.6	50.5	41.8	34.7	34.5	32.4	36.2	40.

The almost invariable increase of myopia from class to class and the similar decrease of hyperopia is striking in its accuracy. The apparent discrepancies in the latter classes may be due to the fact that as a class approaches graduation its number usually diminishes, which would produce a different proportion in percentages. The table of Erismann practically corresponds with others prepared on this subject, and is an impressive comment on the effect of modern civilization on ocular refraction, and tends to confirm the belief that the very cause which produces myopia diminishes hypermetropia.

If the physical condition of a myopic eye is an elongated axis, what are the abnormal circumstances which produce such an elongation, irrespective of whether the eye has a natural myopic tendency or not? Most text-books furnish an explanation of this phenomenon, but the most comprehensive I find given by Fenner, and take the liberty of quoting his words: "They (the scholars) usually sit bending over a desk in a stooping position; the abdominal organs are compressed, preventing the free return of the blood from the head; the insufficient illumination at many schools and colleges necessitates the

bringing of the eyes very near the book, so as to obtain a larger visional angle; and as the book usually rests on a desk or table, the head has to be bent over; this posture produces an increased flow of blood to the eyes, while the higher degree of convergence necessary, causes an increased pressure of the lateral recti muscles on the equator of the globe; thus increasing the entire ocular pressure. The congestion of the fundus oculi causes softening of the scleral tissue, which gives way under the increased pressure, and the organ is elongated backward (posterior staphyloma); the other portions of the sclerotic coat are supported by the broad muscles. The retina is then pushed backward, behind the focus of the dioptric apparatus. When this condition once begins, all the causes which first gave rise to it act with increased force; there is a greater stooping posture necessary, because the eyes have to be brought still nearer to the object; an increased convergence is demanded, and the congestion of the fundus oculi increases; consequently, the softening processes progressively augment, causing the posterior portion of the sclerotica to yield more and more; hence myopia is usually progressive, particularly in the higher grades. There is a greater tendency to the development of this condition in youth from the causes above mentioned, because then the scleral tissues are softer and consequently more yielding than in later life. With the increase of age this coat hardens, becomes firmer and better able to withstand intraocular pressure; hence it is rare that posterior staphyloma, giving rise to near-sightedness, begins after the twentieth year of life."

Consideration must now be turned towards those conditions of school life which encourage and perpetuate the production and spread of myopia, and the first item that claims attention is that children should not be placed in school at all unless their general health is sufficient to endure the strain. It is unnecessary and space does not permit me to impress upon physicians the importance of this assertion, and the large influence exerted upon the eye by the general condition of the patient; but it is unquestionably imperative that we, as medical men, should emphasize the truth to the laity, and especially among those families committed to our care. We are, at present, dependent upon personal influence and the intelligence of those people not medically educated, to exclude from our schools those children not physically prepared to enter; but the time should and undoubtedly will come, when every scholar will not only be compelled to show a doctor's certificate before entrance, but will find it necessary to produce a similar document at the beginning of every school year.

What, then, are those conditions of school life which directly aid in the encouragement and perpetuation of myopia? First of all, the building itself should be so constructed as to present as few obstacles as possible to the proper exercise of the ocular function, and to give the pupils all the advantage possible in the way of location, space (inside and outside) heat, ventilation, plumbing, general cleanliness, water, basins and soap.

The building should be lighted properly and sufficiently, as there can be no question that a paucity of illumination necessitates a closer apposition of books, which in its turn means increased convergence and an encouragement of myopia. Just seeks to controvert this statement by claiming no decrease in myopia in the new and well-lighted schools of Zittau, in Saxony; but the experience of others will scarcely support him in his position. For instance, in Coburg, Germany, 2,323 children were examined in 1874 and showed an average of 21 per cent. of myopia; the same number examined in 1877, after better lighting and seating had been provided, showed only an average of 15 per cent. of myopia. De Metz, of Antwerp, found only about 2 per cent. of myopia in well-lighted as against 5 per cent. in badly-lighted schools. Other statistics, even more striking than these might be produced to show the importance of proper illumination, but it is scarcely necessary as its principle must commend itself to the mind of any one who gives the subject even a casual observation.

The light in the school room should be direct, and not the indirect illumination from the walls of some adjoining building. It must be constant, and dependence should not be placed upon the immediate rays of the sun; for this reason, the windows should face the north. The most remote portion of the room should be bright, even on dark days, to the extent of receiving an illumination equal to ten candle power. Every scholar should, from his place, be able to see some portion of the sky. Light should come from the left, and as high above the scholars as the ceiling will admit. The total window surface should bear to the area of the floor a proportion of 1 to 5, and the panes should be as large as possible. It would be better if artificial illumination was never used, but if it is, a profusion of incandescent electric lights is the best substitute. They should be ample in number, properly shaded and brought sufficiently close to the desk to afford an abundant illumination. This light is much superior to gas, kerosene, etc., as its color is whiter, is capable of uniform distribution and concentration, and does not heat or vitiate the atmosphere.

The question of the construction of seats and desks is one of great importance. Seats should permit each scholar to squarely rest the feet upon the floor, thus favoring a natural and upright position; for this purpose, it will be necessary to provide seats of different sizes for individual pupils, who should be seated according to their height. The seats should have comfortable backs. The desks must correspond in size and have a slightly slanting top, and be far enough away from the head of the scholar (when sitting in an upright position) not to necessitate close approximation of the page of a book. Many seats and desks are so illy constructed for the needs of the individual student, as to just allow the head of the patient to emerge from the top of the desk, thus necessitating enormous convergence when attempting to study. These defects are usually observed in primary departments, where full-sized desks are used by very young pupils. Strict rules are enunciated by Fuchs and others as to the relation which should exist between the desk and seat. Fuchs says that "the proper position is that in which the shoulders and pelvis are parallel with the edge of the desk, and the head upright or bent but slightly forward. As to the construction of desks and seats, there must be several sizes, to suit scholars of various ages. The distance between seats and desks in the vertical direction, must be but little greater than the distance between the elbow and the ischial tuber-

osity. The edge of the desk must overhang the seat about two inches; the scholar can then sit upright."

Rohe does not think it necessary for the desk to overlap the seat, but says that "a line dropped from the near edge of the desk should strike the front edge of the seat."

The object, in any event, is, if possible, to prevent stooping and to compel the scholar to study in an upright position. Various apparatuses have been constructed for the purpose of forcing an erect attitude, but as yet nothing satisfactory and practical has been proposed.

Attention should be given to the distance and location of blackboards, to prevent their being placed at so great a distance from *any* scholar as to necessitate a strain in order to see, and to carefully avoid a position where rays of light will reflect upon their surface in such a manner as to obscure the characters inscribed thereon. Similar care should be given to the placing of maps, from which scholars from time to time are required to study. Some investigators believe in doing away with blackboards entirely, and substituting therefor white surfaces and black crayons, as black writing on white background can be read at a greater distance than the reverse. The same plan has been proposed and practiced in some schools with slates; white slates and black pencils are used on account of lessened reflection. Good results are claimed. Other investigators believe in ceasing to use slates at all, owing to the glistening surface, and substituting in their stead paper and pencil or pen, the paper to possess a non-glistening surface and be non-translucent.

School books should be of a size easily handled, and the paper should be reasonably thick, of good quality, and have a dulled surface; some authorities think that yellow instead of white paper is to be preferred. The Latin letters are best for all kinds of reading, and it is certain that if Germany would absolve itself from nationalism sufficiently to declare an emancipation from its miserable type there would be less myopia in the Fatherland. The letters should be well-printed, clear, distinct and large. Cohn insists that all books should be prohibited from schools in which smaller type is used than long primer, a less interval between the lines than one-tenth of an inch, a longer line than four and one-half inches, and more than sixty letters to a line.

The question of erect or slanting handwriting is one that is much agitated at present. Ellinger, in the first place, opposes the practice of inclining the copy-book to the right instead of straight ahead, feeling that it favors the development of myopia. However this may be, it is certain that there is variety in the opinions expressed relative to the preference as to erect or slanting writing, with the drift of sentiment favoring the former. Berlin favors the inclined writing, but he appears to be occupying a somewhat isolated position, as a tendency of opinion from Shubert, Manz, Königshoefer, Seggel and others certainly indorses vertical handwriting. It is felt that the oblique system favors myopia by an unnatural position of the head, and by the fact that upright writing is usually clearer and more easily read than the reverse. Continuous work is detrimental to the health of the eye. This can be avoided in the school by often changing from one occupation to the other, as from desk work to recitations, and by frequent intermissions, during which time the rooms should be thoroughly aired. Matais claims that at the Military Prytanæum and at the School of Arts and Industry at Angers, myopia is relatively rare, although the hygiene is not better than in the colleges, because the interruptions in work are frequent, consisting in manual work, games or active exercises.

Unquestionably, much harm is done by indiscretion in ocular service at home. Granting that our directors performed an elimination of all existing school evils relative to ocular hygiene, there would still remain an element beyond their control in the abuses at home. Here we have a recapitulation of all the evils already enumerated in school life, to which others are added. Provisions are not usually made as to proper desks and seats, light and interruptions in work. Children are allowed much latitude as to what they read, and when and how they read it. Poorly printed novels are absorbed before and after going to bed, in sitting and reclining postures, by any light that happens to be convenient. In view of such abuses which will inevitably exist, especially among the poor and ignorant, the warfare against myopia is not of an encouraging character; but it does not absolve us from pressing the battle whenever the opportunity presents. If perfection can not be obtained, progress can at least be made, and much benefit will accrue from educating school directors, teachers and the laity who can, in their turn, perform a part in disseminating a knowledge of the subject among those who are less informed than themselves.

As a rule, children are sent to school too early in life, and too little attention is paid to the individual adaptability of the child for school life and its requirements. It is felt that a child must go to school at a certain age, irrespective of his physical condition, and such generalizing of educational methods is frequently followed by exceedingly detrimental results.

Children often go into kindergartens with perfect refraction, and acquire myopia before entering the primary department of the public school. The use of the eyes at a tender age, especially in those children inheriting a myopic, tuberculous or scrofulous tendency is exceedingly hazardous. Their tissues are soft, pliable and yielding, particularly where such parental predispositions exist; and the confinement and bad school hygiene, coupled with the desk and eye work incident to school life, unquestionably form a combination of circumstances conspicuously favoring the development of myopia.

Myopia is rare before the eighth year of life. Hypermetropia is the normal refraction of early life. Myopia usually begins about the tenth year and reaches its maximum at about the twentieth year. Statistics show that the less educated the nation, the more cases of normal refraction are found. Hence these early years of life should be guarded from the refining influences of intellectual advancement as much as possible, bearing in mind that it is better to devote our youth to laying the foundation of a strong constitution, and that the rural child, raised upon the farm, with practically no educational advantages until about the fifteenth year, often far outstrips his city rival whose life has been spent in kindergartens and other graded schools.

The question as to what shall be done with these children of perverted tendencies is one of great importance. Shall they be sent to the public school at

the average age, to be thrown into the common receptacle, to be assigned the same lessons, and to be treated in exactly the same way, as the youth of untainted health and robust constitution? Common humanity unhesitatingly answers in the negative. Such children should rather be allowed to spend their lives in the open air, with a judicious intermixture of properly assigned manual labor. Their early education should be religiously neglected, and every effort should be made to mitigate the unfortunate tendencies of birth by a physical rather than an intellectual life, spent preferably in the country, where the air is good and the surroundings healthy. Systematic study should not be begun until about the fifteenth or sixteenth year, after the body is thus strengthened, and the ocular tissues have grown firm and better able to resist the encroachments of myopia. Even now, it will be better to teach the child at home, or at some private institution, where its student life can be properly controlled.

It may be urged that such advantages are only for the wealthy, and the question may be asked as to what must become of the poor myope. This may be exceedingly pertinent, but it must not be forgotten that the compensations of life are somewhat evenly divided, and that myopia, is much more prone to occur among the wealthy and intellectual, than among the poor and illiterate; consequently the necessity for such restrictions in the early career of our youth will not so often be required of the atter class.

Can myopia be cured? This is a question which is forced upon us, and must be conservatively answered. When once thoroughly established, and decided organic changes have occurred, the probability is that with our present knowledge of the disease it can not be cured; it can only be alleviated. That by improved school hygiene, education of the laity, and careful and uniform correction of refractive errors, it is susceptible of material mitigation in a community, is amply proved by the careful and painstaking investigations of Risley and his associates in Philadelphia. But it must ever be borne in mind that the only reasonable hope for even partial emancipation must necessarily rest in prophylaxis, school hygiene, an intelligent coöperation of the laity, and a proper correction of the refractive error by suitably adjusted glasses.

But while the subject of myopia in youths is of signal importance, we must not lose sight of another class of perverted refractives, viz., the hypermetropes and astigmatics. These, it is true, do not possess that element of danger to sight found in malignant myopia, where the disease marches on to posterior staphyloma, detached retina and blindness; but it does mean much, in the possible intellectual progress of the individual, and the attainment of those heights of knowledge apparently demanded by modern civilization.

The myopic eye is often a strong eye, capable of performing much work at short range; but the hypermetropic or astigmatic eye possesses attributes quite the reverse, viz., comparative ease in distant service, but great inconvenience for close work. The hypermetropic or astigmatic youth suffers from those various symptoms, such as headache, eye-tire, etc., generally classed under the one term, asthenopia, and which have their principal origin in an overtaxed ciliary muscle. He goes to school, but takes no interest in his studies; he is called idle, because he gives so little attention to his books; he is classed as stupid, from never knowing his lessons; he is thought to be a complainer, because he frequently has headaches; he taxes the patience of both teacher and parent, whose wonder is excited when the inane, idle, stupid, fault-finding child is transformed into a wide-awake, industrious, healthy student by the aid of a properly adjusted pair of spectacles. This is an experience common to every teacher or oculist, and the frequency of its occurrence should be an incentive to active efforts for relief on the part of those from whence relief must come. An important matter of this nature can not with safety be left to the laity to settle, for the laity is frequently ignorant, careless and impecunious. Some means must be devised by which an ocular examination of each scholar shall be a requisite for entrance into a school, and by which a repetition of such an examination must be made at stated intervals during the scholar's school life. Opinions differ as to the necessary frequency of such tests; some feel that they should be held every six months and others that annually will be sufficient. Either would be an improvement on the present system, where nothing of the kind is required.

In addition to this, provision must be made by which children who shall be adjudged to possess defective eyes, shall be required to produce a proper certificate from a reputable physician, before admission to the school is permitted. Such a specification would exclude work done by opticians, jewelry and department stores, etc.

The ideal method would be to have a competent physician appointed by the proper authorities, whose duties shall be to pass upon the eligibility of all scholars, both upon entrance and at stated intervals. This would, however, be open to certain objections. It would involve a salary which the different boards might be unwilling to pay, and would inevitably impair the efficiency of such a law, by a degeneration into political jobbery. Beside this, the appointee would undoubtedly be distasteful to many pupils or parents, which would constitute an obstruction to harmony and an embarrassment to the examiner.

In case such a method is deemed inadvisable, the next best procedure would be to require of each pupil a proper certificate from a reputable physician, stating the ocular condition of the applicant, with recommendations for relief if necessary. This, again, would be opposed by the people as compelling an ocular examination where it is perhaps unnecessary, thus incurring a useless expense to parents or guardians. It is true that a combination of both of these methods might be adopted, and a law passed requiring that each pupil shall pass an ocular examination, by a physician employed by the Board of Education, but leaving it optional with the parent or guardian whether the child shall be passed upon by the school examiner, or taken to a physician of recognized standing whom they themselves shall select. This would be a compromise measure but would still be open to the combined objections of both procedures in mitigated form.

There is another method of dealing with the subject, proposed by the writer, which may not be considered sufficiently stringent and scientific for enthusiasts on the matter, but which the writer believes to be all that can be accomplished at present and may pave the way for something more energetic in the

future. It can be executed at practically no expense to our school treasury, will but seldom cause useless expense to parents and guardians, can be universally applied and, if thoroughly accomplished, will give general satisfaction. The idea is simply to have a physician of recognized ability deliver a lecture or talk on the subject to the principals of the city schools, once a year, just preceding the opening of the schools. This talk shall include plain and comprehensive remarks on the anatomy and physiology of the eye, refraction, and how to use but not abuse the eyes in school and home work. It will also instruct the principals how to test the eyes, in accordance with the subjoined scheme. Besides this, printed directions for testing the eyes shall be given to each principal, which might read something like this:

INSTRUCTIONS FOR EYE EXAMINATIONS.

The examination should be made privately and singly, in a room apart from the general school session.

Place a card of Snellen's Test Types on the wall in a good light; do not allow the face of the card to be covered by glass.

The line marked xx (20) should be seen at twenty feet, therefore place the pupil twenty feet from the card.

Each eye should be examined separately.

Hold a card over one eye while the other is being examined. Do not press upon the covered eye, as the pressure might induce an incorrect examination.

Have the pupil begin at the top of the test card, and read aloud down as far as he can, first with one eye and then with the other.

If the pupil can read xx (20) test type with each eye and does not, upon inquiry, complain of tired and painful eyes or headache, he may be admitted to school; but if he can not read xx (20) test types with both eyes, or complains of tired and painful eyes or headache he should be sent home with a card of information to the parent or guardian.

This card might read as follows:

MINNEAPOLIS, Oct. 1, 1894.

Dear Sir:—Your son, John Smith has been examined by me this day as to the condition of his eyes.

I believe it to be advisable for him to consult a physician of recognized standing, from whom he must bring a certificate, stating it to be wise for him to continue his studies. Some regular oculist is recommended.

Without such a certificate he must be denied admittance.

Respectfully, MARY JONES,
Principal of Douglas School.

This scheme possesses many advantages. The physician selected to deliver the lecture or talk to the principals, would undoubtedly be glad to do so gratuitously, and much useful and practical information could be deduced therefrom, which would react most favorably on the scholars.

The test cards could be procured at a nominal cost, not to exceed 25 cents for each school, and the printed cards of instruction for principals, and the cards to be sent the parents or guardians would cost but little. The expense, therefore, of the entire outfit would be so small as to be unobjectionable.

Then the test is so simple and easily accomplished, that any one of sufficient intelligence to be a principal of a school could soon master it and examine the pupils with such ease and rapidity that a large school could be tested in a very few days. An average of two or three minutes to each pupil would be more time than is necessary, if systematic arrangements were made.

The writer is well aware that such an examination is not ideal and is open to objections; but it is better than nothing, is fairly sufficient, can hardly antagonize interested parties, can not savor of medical favoritism, involves practically no expense, and is so simple and practical as to commend itself to all parties concerned. In large cities the scholars would unquestionably consult oculists instead of general practitioners, and where the latter *were* consulted the patient would probably be referred to the former. Those not financially situated so as to render it possible to consult an oculist in his office could procure equally good services at some dispensary.

If such a law were enacted in small towns, at least one or two resident physicians would find it profitable to become somewhat familiar with the subject; or children could be sent to a neighboring city for advice; or, if a fair number of cases were to be examined, an oculist could undoubtedly be procured who would be glad to make a trip into the country for a few days to examine defectives in a tier of towns.

The writer believes this to be the only plan for relief that can be procured at present, and as such trusts it may meet with the approbation of those interested in the subject.

TWO EXAMPLES ILLUSTRATING POSSIBLE SOURCES OF ERROR IN THE DIPHTHERIA CULTURE TEST.

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The diphtheria culture test, valuable as it is in clinical diagnosis, is not infallible. Indeed it would be strange to find it an absolutely certain method, dealing as it does with forms of life confessedly prone to sudden, and at present, inexplicable variations. The following examples are cited because they illustrate some puzzling occurrences in routine bacteriologic work, and because they impress us with the necessity of due scientific conservatism in even so apparently simple an operation as the culture test for diphtheria.

The first case came to notice in Chicago, in February, 1894. A Prudden swab was kindly brought to the laboratory by Dr. J. B. Loring, of Valparaiso, Ind. The swab was obtained from a case which had all the clinical features of true faucial diphtheria, and the provisional diagnosis of diphtheria was strengthened by the fact that diphtheria was endemic at the time in Valparaiso, and that a clear history of exposure could be elicited.

An examination of several cover-glass preparations from the twenty-four hours' culture on Löffler's medium showed only micrococci from this case, and a diagnosis of pseudo-diphtheria was made; much to the surprise of Dr. Loring. Four days after the first examination I happened to take up the tube of Löffler's serum which had remained in the incubator since the first preparations were made. It was noted that the macroscopic appearances of the culture had changed, for while it had presented a yellowish color during the first two days, it now took on a dirty grayish tinge. Microscopic preparations from this four days' culture revealed bacilli in predominating numbers, resembling in every way the picture usually obtained in eighteen to twenty-four hours after the inoculation of Löffler's medium with the material from genuine diphtheria. No attempts were made to isolate the bacillus, so that, save for its strikingly characteristic morphologic resemblance, it is impossible to say that it was a true *Bacillus*

diphtheriæ. On this account this example was dismissed for want of corroboration until a second, and more peculiar experience again brought it to mind.

On Dec. 20, 1894, through the courtesy of Dr. L. B. Tuckerman, of Cleveland, I received a Prudden swab from the throat of a girl, a domestic, who exhibited certain suspicious symptoms of diphtheria. She had considerable fever, some pain and extensive redness in the throat, swollen tonsils, and a small, isolated patch of grayish membrane on the left tonsil. The patch of membrane did not increase much in extent; the patient was much improved on the second day; and was pronounced well after the third day. About a week later the girl again consulted Dr. Tuckerman for a debility and depression which had persisted since the acute illness.

A tube of Löffler's medium was inoculated as soon as the first swab was brought to the laboratory. After twenty hours in the incubator the surface of the medium was covered with an uneven grayish coat resembling an early culture from true diphtheria. The usual microscopic examination of stained preparations was made, and as great numbers of irregular bacilli with the morphologic features of the typical Klebs-Löffler bacillus presented themselves, together with a few micrococci, a diagnosis of true diphtheria was made. The next day another swab was obtained from the patient, and on subsequent examination only micrococci were obtained from it. This happened also with a swab obtained on the third day of the disease. Due care was taken in the use of disinfectants in the throat before the swabs were obtained; and there was nothing in the treatment which could account for the strange behavior of the bacteria in this case. The *Staphylococcus pyogenes aureus* was subsequently identified as the predominating coccus in the cultures obtained from the second and third days. The Löffler's medium employed in the course of these experiments was all of one batch, and was found by numerous control experiments to be above suspicion.

A scratch attenuation on a plate of Löffler's medium was made from the first culture tube of this case on December 9. Colonies of considerable size developed in twenty-four hours at the incubator temperature, and cover-glass specimens from several of these colonies showed only micrococci, notwithstanding the fact that the mother culture still showed the bacilli noted in the first examination, in great numbers. In thirty-six to forty-eight hours the colonies on the plate assumed a pronounced orange-yellow color, and transfers from these colonies to gelatin tubes gave a liquefying growth resembling the staphylococcus aureus. In fact, this species was subsequently isolated and identified in detail.

A second scratch attenuation on Löffler's medium from an isolated twenty-four hours colony on the first plate also gave micrococci that proved to be the *Staphylococcus aureus*, though the second plate did not exhibit the subsequent peculiar behavior observed on the first one.

After two or three days the plates were removed from the incubator and set aside at the room temperature. On December 24, fifteen days after the scratch attenuation, a striking change in color was noticed in the colonies on the first Löffler plate. The colonies were no longer orange-yellow, but grayish or white. These altered colonies were now examined microscopically and gave vast numbers of bacilli, closely resembling the bacilli seen in the original culture tube, though staining more faintly. In order to watch the development of these bacilli, another scratch attenuation was made from the original tube culture on a plate of Löffler's serum. For six or seven days, at the room temperature, the growth on the plate, both the confluent lines of the first scratches, and the isolated colonies, exhibited the orange-yellow of the *Staphylococcus aureus;* and only micrococci could be discovered in stained preparations. Gradually, however, the white growth appeared, first at the edges of the confluent lines, and then at the periphery of the isolated colonies until, at the end of two weeks, the yellow color was entirely lost; and the grayish or white colonies gave hosts of bacilli and very few cocci, in stained preparations. Curiously enough, in both of the plates which underwent this transformation, *every colony, either isolated or confluent, was overgrown by the bacilli.*

After these failures to separate the cocci and bacilli by the scratch-plate method, several attempts were made to effect separation by the ordinary dilution-gelatin-plate method. This was impossible, however, on account of the rapid liquefaction induced by the *Staphylococcus aureus*, as the plate ran down before any other growth appeared. Agar plates have not been tried up to the present time.

An attempt to explain the results of these experiments presents many difficulties. At first sight it would seem easy to assume that, since the bacilli on the plates cropped out only at a late date, and at the room temperature, they must have belonged to some slow growing saprophytic species. But it must not be forgotten that in the mother culture from which the plates were prepared, bacilli, indistinguishable morphologically from *Bacillus diphtheriæ*, appeared promptly in twenty hours at the body temperature. Further than this, the remarkably close association of the *Staphylococcus aureus* with this bacillus which absolutely refused separation by the scratch-plate method, and by the gelatin-plate method, can not be readily explained, and if it does nothing else, this occurrence forcibly impresses upon us the inadequacy of the plate method of separating bacteria. Then there remains for explanation the fact that in three swabs on three successive days from the same patch of membrane in a sore throat, diphtheria-like bacilli appeared only in the first culture, and micrococci, consisting principally of the *Staphylococcus aureus*, appeared in the other two cultures. The most probable assumption that suggests itself to me is that this bacillus, which was morphologically identical with the *B. diphtheriæ*, was forced to undergo these peculiar changes, both in the throat of the patient, and on the culture media, as a penalty for its symbiosis with the *Staphylococcus aureus*.

TOXICS.

BY WM. F. BARCLAY, M.D.

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A poison is a substance, which when taken into the system is either absorbed or by its thermal action on the parts with which it is in contact produces deleterious effects. It may seem strange that almost all toxics are innocent, until they reach the circulation of the blood. Their slow or rapid absorption largely determines their deleterious effects upon the system. In our observations we are reminded from time to time of the idiosyncrasies of individuals and we sel-

dom inquire into the causes of these peculiar conditions. It is generally attributed to a perversion of the nervous system, but in truth is caused by a rapid absorption of the poison and is modified by the power of resistance inherent in the individual. Hereditary predispositions and peculiar cachexias in persons are dissimilar conditions, and are in no sense identical. Heredity has not been defined satisfactorily, but the conditions of progenitors are transmitted in an attenuated form, which underlies their maladies.

When disease is engrafted into the organism it destroys the equilibrium of the entire physical life, and there is a want of coördination and harmony that is essential to perfect development and health. The continued multiplication of these distorted and diseased germs can in no way be more advantageously studied than by the observance of the results that follow. The non-observance of this law enfeebles and annihilates entire families and races. As to cachexias, it is a law of nature throughout the animal and vegetable kingdoms that the multiplication of likes tends to weaken organic life and, on the other hand, that the aggregation of dissimilars strengthens the protoplasmic results of differential unions. The non-observance of this truth produces results to which we apply the word cachexia. In its application to animal life, it is so well understood and applied in the union of the sexes, that the consequent results are most advantageous. The same principles are applicable to man in his protoplasmic development, and if properly studied and understood are of the most benign character as to perfect physical development. The vulgar opinion prevails that hereditary diseases are innate and that they lie dormant for a time and then, as it were, explode and destroy their victims. This doctrine is as false as a general rule, as it is ridiculous, as simply a predisposition is transmitted. Were it true, all such weaklings would die in infancy. It would be infinitely better for all such to die in babyhood than to live and suffer from inherited disease. The great desideratum for the educated and enlightened part of the human race is to consider this truth and put it into practical use, so far as the health, intellect, strength and well being are concerned in the multiplication of the race.

It is not difficult for the acute and careful observer to indicate the affiliations that will in a general way insure the best results. Divine as well as human laws condemn consanguineous marriages on account of their painful results. This great truth has been taught by the most careful, aggressive and learned physicians and surgeons, down through the decades, that syphilis and scrofula are identical. The views of the immortal Dr. Samuel D. Gross have been constantly with me, in an experience of over twenty-eight years in the practice of medicine, and have been verified in my observations to my entire satisfaction. That the toxic germs of syphilis are transmissible in the various stages of the disease is incontrovertible and undeniable. It is probable that there is a living germ for all diseases, and as our knowledge increases upon this subject we will be enabled to prevent and cure many diseases that are now believed to be beyond prevention and remedial influences. When hereditary disease conditions appear and toxic causes are present, they find an easy access into the system and suitable influences for their propagation. The blood is the life of the body and constitutes about one-fifth of its entire weight, which enables us to understand how deleterious must be the entrance of toxics into the circulation, and their effects upon the economy of life.

The germ theory of intoxication is so well established that there are few members of the medical profession who deny or question its correctness. Toxics enter the circulation of the blood and their action on the normal cells produce toxins and the multiplication of these products bring on pathologic conditions. Nothing is more easily demonstrated than that the emunctories throw off toxics. All excrementitious matter when re-introduced into the circulation is poisonous; urine, bile, feces are poisonous and become more so after exposure to the air. In diseases many things have to be taken into consideration—the individual, age, sex and other conditions, as well as his environments. We observe at once upon the entrance of a toxic into the circulation of the blood that all the functions of the body are impaired to a greater or less degree, and that definite poisons are quickly formed such as ptomaines, leucomaines and others which are nothing more or less than an altered nutrition. The vital forces are at once disturbed or arrested. Primarily the circulation, and secondarily the nervous system are impaired, and a condition termed shock is superinduced. This state is a most interesting study to the pathologic student, difficult of comprehension and explanation. It may be remarked that all the vital forces are similarly affected at the same time. The *vis medicatrix natura* can at no time be more carefully studied and understood than when the vital forces struggle for an equalization, and restoration of the normal conditions.

In the state of shock, nature seems intent upon relieving herself of all effete matter, by the discharge of the contents of each viscus of the body. All such efforts should be assisted by artificial means in restoring a healthy condition. Vigorous health and strength are maintained by proper food, perfect digestion with healthful environment. In the germs of organic life, disease takes its beginning by the introduction of toxics; thereby the blood is changed and disease set up. Certain predispositions are inherited and the subject rendered more easily affected by specific toxic influences. That all persons exposed to the same influences are not affected is because of a weakened vital condition thereby rendering them more easily poisoned. All are impressed by the same specific toxic influence under similar circumstances. Molecular and cell life are great mysteries of which we know very little. When the physiologic laws of cell life are properly considered it is evident that the mineral and animal constituents are alike being prepared for the building up of the different tissues that constitute the body.

We begin life by the blending of cells that are healthy or diseased which determine the ultimate result. Farther on we are taught that the blood corpuscles are formed in the spleen and long bones, but I would inquire how they are formed, when neither spleen or bones are present in embryonic development?

In organic growth the circulation is first established, the nervous system follows on, and seems to regulate the entire development of the body. The truth I would establish is that disease begins in the cells and that all treatment employed must be directed and applied to the circulation of the blood, that while we may differ as to the utility and impor-

tance of remedies, we can not gainsay their benign influences when wisely and judiciously administered in diseased conditions. That a physician can practice medicine and deny the value of scientific medicines is the surest evidence of that want of knowledge to prosecute the work of the sacred art of healing. Toxics are poisons that produce conditions peculiar and distinct in their final results. We are fully aware of many different forms of toxic life, but at a great loss to know by what means they obtain entrance into the body and circulation. We know that food, drink, and the air we breathe are vehicles through which the germs reach the circulation. Contact is necessary; that most infectious toxic germs may be deposited in various stages of incubation, but are the same in each disease. Toxics may be classified as contagious, infectious, malarial and thermal. The vitality of disease germs is variable and in general terms can not be specified. The germs of many contagious diseases have been known to retain their vitality for long periods of time, and to readily prove toxic under favorable conditions. Smallpox, phthisis pulmonalis, scarlet fever, diphtheria, measles and many other diseases may be cited as illustrations of the viability of toxic germs.

It is true that in the organism there is a continual tendency toward toxemia from the normal physiologic processes, which is counter-balanced by the excretions of the body. If for a short time you modify or arrest the eliminations by emunctories of the body, the whole economy of life is disturbed, pathologic conditions are set up and disease established. Elimination must take place through five excretory offices; a disturbance or disarrangement of one or more destroys the vital equilibrium of life. The non- or partial elimination of the effete products of nutrition and disintegration generates toxics. The vital forces are a constant barrier through their tendency to equalization of the constituents of the protoplasm of the blood against the deleterious effects of toxics. The abnormal albumens escape by the kidneys, and destroy the renal epithelium; thereby inflammatory diseases of these organs are set up. It may be stated that leucin tyrosis, and many other toxic products of the liver are the results of imperfect excretion.

The body in a normal and pathologic state is a receptacle and laboratory of toxics. I am impressed, while considering this subject, that by the cravings of the appetite, nature in this way points out that which she in a general way needs for her sustenance. It has been a rule of practice with me to permit the sick to eat and drink that which the appetite craves. I have as yet to see good reasons for changing this course of practice.

There must be a perverted nutrition in order that infection can take place in man, with a single exception, and that disease is syphilis. In order that disease can attack and harm the human body it must first be prepared for it by pathogenic influences. If it were not for this necessity the human family would have perished from off the earth before this time in the world's history. Nutrition is life, and all influences that tend to destroy must first impair it. We must study nutrition in all that pertains to it in its equilibrium; any disproportion in its constituents impairs and unfits it for its normal use. Perverted nutrition leads to the formation of new substances which become toxic. That much can be done to prevent and cure disease by change of location is well established. Many lives are saved and much suffering averted by careful and accurate knowledge of climatic influences. Therapy is too general in its tendencies. A few remedies properly prepared and wisely administered give the best general results.

It is to be lamented that venesection is almost forgotten and neglected in the treatment of diseases. We are taught that our civilization has brought about systemic conditions that forbid the use of the lancet. Is it true that we can bring about the same results by our modern therapeutics? We may enumerate a few therapeutic agents, mineral and vegetable, that aid nature in overcoming the pathologic results superinduced by the introduction of toxics into the circulation of the blood. Gold, arsenic, mercury and iodin with their compounds, and opium, Peruvian bark and their alkaloids, with digitalis, aconite and veratrum virid.

That the practice of medicine is becoming more empirical in the age in which we live, is not true but, on the contrary, is broad and general in research as to causation and treatment. Research as to the origin and effects of diseases is becoming more general and characteristic. Lesions of the body are more carefully and scientifically studied each year, as we bring to our aid helps in the investigations now going on in our laboratories that simplify and determine the causes of disease, as well as the changes it brings about. We now definitely know the causes of many of the most fatal maladies, and apply prevention and cures that modify their ravages, to a large extent, and annually save thousands of lives and prevent much suffering. *Contagium vivum* of the contagious germs is beyond all doubt established. The implantation of vegetable organisms in healthy man, their multiplication in the individual infected and their transmissibility to others producing a disease similar to the original, is the final termination of theories on the subject of contagion.

Parasiticism is established in a number of diseases in man, for instance, charbon, glanders, phthisis pulmonalis, gaseous, gangrene, blenorrhagia, erysipelas, septicemias, as well as in animals and fowls, swine fevers, symptomatic pustule and cholera. Each disease is produced by a microbe, and we must wait for the discoveries yet to be made in microbiologic research for those not already discovered. The dissemination of microbes is universal, and that all are not alike affected is not so easily explained. To a healthy man, the microbe is less likely to be dangerous than to one not in good health, as the individual circumstances are less favorable for development. A modification antecedent in nutrition, renders infection more probable. Fatigue, exposure to cold and wet, severe excitation, bad food and air and many other influences are disease developing causes. Hygienic causes such as excesses in eating, drinking and venery, with loss of rest and bad air develop nutritive disorders in which the cells are perverted, a tainted nutrition set up and among these cells the generative elements of ovule and spermatozoön are formed and by their union will cause the beginning of a new creature whose cells must partake of the disorders of its antecedents. In the entire domain of pathologic research, we know the least about the toxalbumens. As yet our knowledge of the normal physiologic albumen, in health, one of the most important constituents of the blood, is very limited. It is accurately known when there is a disproportion of the

red and white corpuscles, as well as the normal fibrinization of the vital fluid, the toxalbumens prevent the formation of the red and white corpuscles. It may be here observed that in certain pathologic conditions there seems to be a third corpuscle or something that very closely resembles it. In the field of antitoxic treatment, there has been in the past fifteen years a large amount of investigation and laborious work in laboratory research, and while we can but deplore the futility of results, so far as toxin treatment has advanced, we must very highly appreciate the advances so far as causation of diseases is concerned. While it is perhaps too early to draw positive conclusions as to the method of treatment, it may be fairly stated that thus far permanent results are disappointing. Remedies thus far highly beneficial have been obtained from the mineral kingdom, so far as prevention and cure have prevailed.

Prevention is better than cure, and each year the profession of medicine is accomplishing more in this direction. We are enabled by quarantine to circumscribe plague districts, and by cleanliness and disinfection to prevent the spread of disease. The good accomplished in this way is inestimable, and the number of lives annually saved can not be conjectured. The pestilences transmitted from foreign countries under our present immigration laws are a constant menace and danger to our people. I am unable to recall a single instance of the transmission of pestilential diseases from our country to foreign countries.

The constant vigilance on the part of physicians as to the prevention of the spreading of disease in different ways is not estimated or appreciated by the people. We seldom hear it referred to but, on the other hand, the profession is frequently charged with carelessness in carrying diseased germs to their patients. Great care should be exercised in treating patients suffering from contagious and infectious diseases lest the germs might be carried in this manner. From these considerations it appears that when the toxic causes are present, their ready transmissibility and easy access to others, under suitable influences for their propagation, can not be overestimated. It is probable that there is a living germ for all diseases, and as our knowledge increases we will be enabled to prevent and cure many diseases that are now believed to be beyond prevention and remedial influences.

The profession of medicine is now tending toward specialism, perhaps not in some branches to its best interests, but it certainly is true that the bacteriologist is entitled to a more prominent place than he has yet attained. The sciences of bacteriology and therapeutics keep pace with each other and annually many thousands of lives are saved and much suffering averted. The causation of many diseases is beyond our present comprehension, yet the processes following primary elementary dystrophies, nerve reaction disturbances are antecedent to nutrition and infection. Diathesis is a permanent disturbance brought about by the blending of germs that provoke and maintain pathologic processes. It is generally considered a morbid temperament dwarfing all the powers of animal life.

In conclusion, the laboratory research and scientific investigation of toxics as to their propagation in cultures and their introduction into the bodies of man and animals for scientific results are the labors of the bacteriologist. We do not present you the labor of a volume but rather a short review of the scientific work that has been done in this most interesting field of thought, and its application in the practice of medicine at the present time.

North 21st Street.

FREE HYDROCHLORIC ACID—IS ITS ABSENCE FROM THE STOMACH A SIGN OF CANCER?

BY RICHARD B. FAULKNER, M.D.
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It is important to know whether free hydrochloric acid is secreted by the stomach. It is important to know whether its absence from the stomach is an indication of cancer of that organ. Prof. Wm. Osler, of the Johns Hopkins University, in his excellent work on "The Practice of Medicine," published in 1892, states that, "great stress has been laid of late years upon the absence of free hydrochloric acid in the secretions. As an outcome of the enormous number of observations which have recently been made, it may be said that free hydrochloric acid is absent in a majority of cases of cancer of the stomach. This defect is associated with impairment of the secreting function of the organs. The examination should be made repeatedly by the methods already referred to, and with our present knowledge the persistent absence of HCl in the stomach contents, taken in conjunction with other symptoms, may be regarded as highly suggestive of cancer. As Kinnicutt expresses it, 'the presence of HCl in the stomach in repeated examinations in doubtful cases is of the greatest diagnostic value, and points very certainly to absence of cancer.' Rosenheim has very recently shown that in cases in which cancer develops in the base of an old ulcer HCl may be present throughout the course."

Kinnicutt's statement can not be proved.

Rosenheim contradicts Osler. If "the absence of free HCl is associated with impairment of the secreting function of the organ," then why should a cancer situated at the base of an old ulcer form an exception to the rule when, as a matter of fact, the ulcers themselves impair and often destroy the secreting function? If Rosenheim is right, then free HCl is absent in cancers not seated at the base of old ulcers. If cylindrical-celled epithelioma and encephaloid cancers constitute a major portion of all cancers affecting the stomach, as is stated by Osler, and if they have always a particular tendency to develop at the site of ulcers, scars and injuries, according to Paget, Holmes, Erichsen and others, then, if Rosenheim is any authority, are we not to conclude that free HCl must be present in the majority of cases of cancer of the stomach?

To obtain the gastric fluid for chemic examination, Ewald's test-breakfast is advised by the leading text-books. This consists in giving a roll of white bread and one glass of water or a cup of tea. One hour later, the contents of the stomach are removed with a rubber tube. No rule, no instruction of any kind, is given in any text-book whereby we may positively know that the stomach is actually empty at the time the test is applied. And in cases of stenosis of the pylorus it is not only possible, but probable, that the stomach is not entirely empty. However, as a result of Ewald's test, "free HCl should be present, but lactic acid absent." (Prof. Wm. Pepper, "An American Text-book of the Theory and Practice of Medicine," published in 1894, vol. II, page 735). "Should con-

tain free hydrochloric acid; should not contain sufficient lactic acid to be recognized by the ordinary tests." (Osler, page 345). Does it not forestall the judgment to proclaim what *should be* present? The usual object of a test is to ascertain what *is* present.

Physiologic chemistry contains no problem more difficult than the determination of free hydrochloric acid in the gastric juice. Many authors assert its presence as a normal constituent, and of the analyses *quoted*, in Foster's "Physiology" for example, no two agree; they vary in the proportion of free acid all the way from .05 to .5 per cent.

The method of chemic analysis commended and relied upon by two of America's foremost teachers let us critically and briefly examine. "The best and simplest test," says Osler, "is that of Gunzbürg: phloroglucin, 2; vanillin, 1; absolute alcohol, 30. To a drop of the gastric contents (better filtered) add a similar quantity of the reagent on a porcelain plate. On evaporation gradually to dryness over a flame, a beautiful rose-red color begins to appear at the edges if HCl is present. This is merely a test for a free mineral acid, but HCl is the only one present in the gastric juice. This test is extremely delicate, and is not interfered with by albuminates, acid salts, or organic acids." (Pepper, vol. II, page 735). The simplicity of Gunzbürg's proceeding would be valuable if the test were reliable. But color tests as a rule are unreliable; and this of Gunzbürg forms no exception.

Gunzbürg's test is not a test for free hydrochloric acid. It will show the presence of free HCl where none existed previous to its application. Sodium chlorid is a constituent of the gastric juice. If lactic acid is present in the stomach contents, evaporation of a drop over a flame will concentrate the acid, which will then attack the sodium chlorid and form free HCl. Other concentrated acids will do the same.

Gunzbürg's test is not a test for a free mineral acid. The identical rose-red tint will be obtained when no free mineral acid is present. Many foods that contain no acid, mineral or other, taken into the stomach will produce precisely the same rose-red tint of the supposed test. Again, there are acids formed in the body, not mineral acids, that will produce the same brilliant rose-red tint of the so-called test. For example, in those who possess the oxalic diathesis, oxalic acid is formed in the living body by oxidation.

Oxalic acid decomposes dry sodium chlorid when heated, with evolution of hydrochloric acid (Fownes' "Chemistry," page 658; Brande and Taylor, page 384).

Oxalic acid responds perfectly to the Gunzbürg test in the presence of sodium chlorid. Oxalic acid exists in many of our food plants, as a salt of potash, and is widely distributed in vegetation. Bin-oxalate of potash is found in common sorrel, wood sorrel, and in garden rhubarb associated with malic acid (Fownes,' page 659). It exists in great abundance in tomatoes and in many other acid fruits.

Gunzbürg's test is utterly, absolutely worthless, as proved by the following experimentation:

Experiment 1. With a minute quantity of bin-oxalate of potash, sodium chlorid and lactic acid, Gunzbürg's test yields on evaporation over a flame a rose-red tint identical with that produced in the presence of free hydrochloric acid.

Experiment 2. With a minute quantity of bin-oxalate of potash, sodium chlorid and tartaric acid, the same brilliant rose-red tint is obtained when evaporated over a flame in the presence of the Gunzbürg test solution. Baking powders contain tartaric acid. A biscuit or a roll of bread, as in the Ewald test-breakfast raised with baking powder, contains tartaric acid. And wines contain tartaric acid.

Experiment 3. Bin-oxalate of potash and sodium chlorid, dissolved in water, and Gunzbürg's test added, yield when heated over a flame a rose-red tint identical with that produced by free hydrochloric acid.

Experiment 4. Tartaric acid and sodium chlorid, dissolved in water, and Gunzbürg's test added, yield when heated over a flame a rose-red tint identical with that produced by free hydrochloric acid.

Therefore, if a patient suffering from a cancer of the stomach were to eat a little rhubarb or tomato or take a drink of wine and Gunzbürg's *test* were to be applied to his gastric contents, it would be conclusively proved that he had no cancer!!

Uncombined hydrochloric acid is not found in nature, except as an occasional volcanic product (Brande and Taylor, page 216). No mineral acid is necessary in the process of digestion. Pavy ("Food and Dietetics") states that HCl has no particular property in rendering the digestive power of the gastric juice more energetic. The presence of free hydrochloric acid as a normal constituent of the gastric secretion has never been demonstrated. The only way to *positively prove* its presence is to separate the acid; just the same as you would be required to separate arsenic from the contents of the stomach in a supposed case of poisoning by that mineral.

The absence of free hydrochloric acid as a normal constituent of the gastric secretion has been repeatedly proved by the most competent authorities, including such original investigators as M. Claude Bernard, the profound French physiologist, Robin, Verdeil, and Professor Rogers, the able chemist of the University of Pennsylvania. Our illustrious American physiologist, John C. Dalton, taught that lactic acid is the normal acid constituent of the gastric secretion. He neither taught nor acknowledged the presence of free HCl.

Prof. Carl Seiler records a series of highly interesting experiments in the *Philadelphia Medical Times*, Feb. 6, 1875, which go far to prove that no hydrochloric acid is present in the gastric secretions.

The most remarkable line of experimentation ever conducted upon the gastric secretion remains unnoticed by any author, compiler, or text-book, within our knowledge. These extraordinary experiments seem to have been forgotten. These experiments, unquestionably the most exhaustive, as well as the most authoritative upon this subject, were conducted under circumstances both exceptional and fortuitous, in the physiologic laboratory of the University of Pennsylvania. The gastric contents were those of a criminal (Heidenblutt). He was of strong physique, and was executed two hours after partaking of a hearty breakfast. Immediately after the execution, his stomach with its contents were removed to the laboratory of the University. The lining of the stomach was carefully scraped, and this with the contents of the stomach were macerated, filtered and distilled. The examination was made by Robert M. Smith, and to quote from an article in the *Philadelphia Medical Times*, Feb. 13, 1875: "The following deductions confirm entirely those obtained by Profs. F. G. Smith

and Rogers of the University, from the analysis of the gastric juice of Alexis St. Martin:

"1. The gastric juice presents an acid reaction both before and after filtration and distillation.

"2. The acidity in this instance was not due to the presence of hydrochloric acid.

"3. Lactic acid did exist.

"4. Acid phosphate of lime showed no evidence of its presence.

"5. Neutral phosphate of lime did exist, and was held in solution by the lactic acid.

"I would take this opportunity of expressing thanks to Mr. Geo. Hay, a member of the class, and a gentleman of great experience as an analytical chemist, under whose careful supervision these experiments were conducted." Hay states that "free HCl is never present in the human stomach, unless introduced from without; that it would seriously damage it if present; and that it is impossible for it to be found in the stomach, for the reason that its *liberation from a salt of any kind requires the presence of a concentrated acid*, and any concentrated acid in the stomach would quickly destroy the organ. *Concentrated acids are not secreted by the stomach. Free mineral acid is not a product of the stomach of man or animal. Its absence is not a sign of cancer.*" The researches of Bernard, Robin, Verdeil, Dalton, Smith, Rogers, and Hay, *all original investigators, entirely agree.*

THE EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH, WITH THE BACTERIOLOGY OF THE STOMACH CONTENTS.

BY FENTON B. TURCK, M.D.

PROFESSOR OF DISEASES OF THE STOMACH AND INTESTINES, ATTENDING PHYSICIAN TO THE COOK COUNTY HOSPITAL. CHICAGO.

The product formed in the growth of carcinoma of the stomach—whatever it may be—seems early to alter the gastric, secretory and motor functions.

The mucous membrane is markedly affected by this product, so that even before the complete suppression of HCl and other secretory changes have occurred a soil is rendered fertile for the growth of microörganisms, especially the bacterium lacticus and in many cases investigated, seemed the predominating microörganisms.

In the Chicago Post-Graduate Medical School, clinic (on diseases of the stomach and intestines), the Cook County Hospital clinic and in private practice, it is my routine custom to make microscopic slides in almost every case stained for the detection of bacteria. In selected cases of various gastric diseases, pure cultures are made to determine as far as possible the predominant germs.

The various cultures are secured from the mucous membrane, by using a revolving sponge introduced into the empty stomach. This instrument is named the gyromele (revolving sound) which for bacteriologic purposes is inclosed in a sheath until it reaches the stomach, to prevent contamination from the mouth and esophagus. Revolutions are produced by an apparatus not unlike a surgical drill, while the sponge in the stomach revolves and removes the adherent material from the mucous membrane for bacteriologic investigations. The description of this instrument with methods of bacteriologic study and investigation will be published in the *Wiener Medical Wochenschrift.* (See note.)

In all cases of carcinoma of the stomach, numerous colonies of a large variety of germs are found. They seem to revel in this superb culture bed. It is one thing to find stray germs in the lumen of the stomach which may occur in health (as is often the case in removal of stomach contents through a tube) and another to find the *colonization* of germs adherent to the mucous membrane of the walls of the stomach. The whole mucous membrane of the stomach under the changed conditions, is transformed into a large plate culture, so to speak, with a most perfect nutrient media, and unless other evidence is presented to contradict, we shall be forced to consider the infection a powerful and prominent causal factor in producing the rapid alteration of function—the disappearance of HCl, the ferments and final atrophy.

This question is further considered in the results of my bacteriologic studies (which will soon be published) of gastritis chronica produced artificially in dogs by first treating the mucous membrane with tannic acid and other irritants, then infecting it with material derived from the mucous walls of the stomach of patients suffering from gastritis glandular in the various stages. In cases of simple dilatation and cases of stagnation, when carcinoma was absent, lactic acid bacilli could also be found but were not the predominating germs. In these cases, socius ventriculi and other yeast germs appeared more numerous in the cultures.

Between carcinoma of the stomach and simple gastritis there is this difference: In carcinoma, the carcinoma alone may be sufficient to produce poison or other products which render the mucous membrane a fertile soil and permit germs to develop on the walls. In gastritis, the predisposing cause may not be so constant and so powerful as carcinoma, but errors of diet and diseases of other organs also render the stomach a fertile soil for the constant colonization of microörganisms that produce the inflammatory process of a chronic nature. In the cultures, the lactic acid producing bacilli are present in most cases, and frequently almost pure cultures appeared in making the ordinary bacteriologic preparations.

The method of growing germs in the gastric juice mixed with the mucous and food remnant answers well in some cases. In growing the germs upon the mucous membrane of the stomach of pigs, previously sterilized (by fractional sterilization at 50 to 55 cc.) it was found an advantage to spray the surface of the membrane with sterilized starch water. Many of the lactic acid bacilli formed colonies more rapidly, and adding starch to a tube culture seemed to increase the formation of lactic acid.

There are a large variety of germs capable of producing lactic acid, depending upon the soil and other conditions of heat and moisture. All varieties of lactic acid bacilli do not form gas; in fact, the lactic acid bacilli derived from cases of carcinoma of the stomach did not produce gas to a great extent in tube cultures. The following cases are selected from a large number for comparison. In these cases analyses were made for the presence of lactic acid by the Boas method, carried out with strict precautions; also tests were made with Uffelman's magnet. The bacteriologic

NOTE.—Since this work has been completed it has appeared in the *Wiener Medical Wochenschrift*, Nos. 1 and 2, 1895. *Eine neue Methode der Diagnose und Therapie gewisser Magenkrankheiten und bakteriologische studien bei denselben.*

An error occurred in this article, in stating that I use the stomach of birds. It should read, the stomach of dogs and pigs.

investigation consisted in cultures upon various nutrient media and we noted in each case the presence of lactic acid of fermentation. According to Boas' method by introducing oatmeal soup at night, the stomach previously cleaned with sterilized water and the contents removed next morning, filtered and analyzed quantitatively) it was found in many cases that the mucous membrane and motor functions showed marked changes. In carcinoma of the stomach it was often markedly increased, and the bacteriologic investigation seemed conclusive, that a large colonization of lactic acid bacilli occurs.

In carcinoma it often occurs that there is no stenosis—no retention of food—especially early in the disease, and after a test meal given according to Boas' method but little of the stomach juice can be procured, and hence little, if any, lactic acid demonstrated. In using the gyromele and removal of adherent mucous from wall, cultures were found which proved to be the lactic acid bacteria. Upon this and other suspicious evidence an exploratory laparotomy was advised.

Mrs. Jennie L., age 51; German, appeared at the Post-Graduate clinic Nov. 6, 1893, complaining of a diffuse pain in the epigastrium, radiating to the xiphoid appendix, vertigal headache, anorexia, constipation. Family history negative. No symptoms up to two years before, when there appeared a slight uneasiness after eating; gradual anorexia; symptoms gradually increased. Emaciation and pallor followed occasional nausea, until her condition presented marked and rapid degenerative changes. She was under constant medical care. Her case was finally diagnosed as a probable carcinoma of the stomach, and referred to my clinic. Examination revealed anemia; cachectic appearance of skin; absence of panniculus adiposis; hair dry and brittle; absence of all but three decayed molars; gingivitis universal; chest organs with liver slightly enlarged. Abdomen retracted, palpation of the prolapsed pylorus slightly enlarged; no palpitation. Coloptosis and dilated sigmoid negative; rectum large hemorrhoids; genito-urinary organs negative; blood 3,200,000 corpuscles, hemoglobin 45 per cent. No albumen or sugar in urine; indican urea with aromatic sulphates increased.

Clinical examination of stomach contents, Ewald's test made; withdrew 50 cc., reddish yellow color, pungent odor. Litmus +, HCl +. Total acidity 40; Uffelman's for lactic acid after extracting with Squibbs' ether + +, Rennet action delayed, pepton +.

Bacteriologic examination, empty stomach, material removed from the walls with the revolving sponge, four slides, crowded with colonies—bacilli long and short, macro- and micrococci.

Cultures. On the mucous membrane of the stomach of pigs by stroke cultures ten varieties, six produced lactic acid in bouillon made from the mucous membrane of the stomach of the pig, with sterilized starch water added. Along the line of the needle, especially the second line, most of the colonies proved to be lactic acid forming bacilli.

Aug. 20, 1894, had not seen the patient for six months. She was under treatment by assistants. Physical examination showed evidence of carcinoma. Analysis of stomach contents after Boas' method. But a small quantity of stomach contents could be procured; stomach contents washed out, wash water examined, found lactic acid bacilli in colonies.

Nov. 10, 1894, patient appeared much emaciated; cachectic, operation refused.

Dec. 5, 1893. J. J. O'C., age 44, fireman; referred to clinic as a case of carcinoma of the pylorus; complains of slight pain in the epigastrium—a distressed feeling after eating—anorexia, constipation. Family history negative. Previous history negative up to three years ago, began to have digestive disturbances. Lost thirty-five pounds in weight; was disturbed with acid eructations for four or five hours after meals. Great mental depression. Physical examination, rhinopharyngitis, hypertrophic mouth; caries of teeth; gingivitis; tongue coated and depressions of teeth; chest organs negative; liver and splenic area normal; abdomen retracted. Palpation revealed slight thickening of the pyloric region which by the aid of revolving sponge in stomach proved to be the pylorus. With the revolving sound in the stomach, the great curvature palpated two seconds below umbilicus: transverse colon prolapsed; rectum negative; genito-urinary organs, slight prostatic hypertrophy, otherwise negative.

December 8, blood counts 3,940,000; hemoglobin 55. Urine, no sugar or albumen; indican in excess; stomach contents, test meal Ewald's, light watery fluid, 50 c.c. filtered HCl+ (Uffelman's). Extracted with ether, lactic acid reaction. Dec. 14, 1893, bacteriologic slides show a large number of colonizing rods and micrococci. December 21, no lactic acid forming colonies appeared.

Diagnosis, after complete examination of history, physical, chemic and bacteriologic investigation. Gastritis glandularis with hypertrophy of pylorus, drainage and dilatation of stomach. Treatment carried out. September, 1894, patient showed a probable compensatory hypertrophy of the dilated stomach, for it emptied itself perfectly within five hours. All symptoms disappeared and gain of twenty-five pounds.

History and examination by the house physicians, Drs. Walker and McGrew. The following is a short extract: A. M. C. entered Cook County Hospital July 2, 1894, age 45; married. Complained of pain in abdomen. Mother died of consumption; had digestive disturbances all her life. Present illness began six months ago and within last three months noticed tumor in abdomen. Emaciating for last three months. Examination. Abdomen hard mass palpated horizontally with umbilical line, smooth surface, extending to median line; on upper and outer corner of left side of tumor was felt a detached nodule about the size of a dollar, did not move on respiration. Appeared in my hospital clinic August 2, 1894, after Ewald's test meal. Litmus +, no HCl, total acidity 21; Uffelman's + (extract ether). August 3, removed material from the walls with the revolving sponge (gyromele) for cultures. At the same time could palpate the sound in the stomach, showing the tumor to be connected with the anterior wall of the stomach, extending below the umbilicus. August 4, stomach contents for lactic acid after Boas' method, which gave positive results, but no complete quantitative estimation was made further than the iodoform emulsion. The bacteriologic examination showed few colonies of the lactic acid forming bacilli. Positive diagnosis could not be made. Carcinoma of the anterior wall was considered. Patient died August 9, 1894.

Extract from Morgan record posted August 11, 1894: Stomach low down in peritoneal cavity; gastroptosis, white raised nodular areas; adherent with omentum and transverse colon. Anterior wall of the stomach thickened and adherent to abdominal wall, forming a thickened mass; the peritoneum studded with miliary tubercles.

Diagnosis: 1, tuberculosis of peritoneum; 2, surgical kidney; 3, ascites; 4, perisplenitis.

(Signed) E. R. LECOUNT, M.D.
J. W. WALKER, M.D.
H. W. RICHTER, M.D.

Maggie L., admitted to Cook County Hospital, July 29, 1894. Complained of pain in epigastric region and vomiting; family history negative; suffered for five months with heavy feeling in region of stomach, until acute pain with vomiting ensued. Physical examination, patient considerably emaciated; did weigh 136 pounds, reduced to 100 pounds. Chest organs negative; abdomen retracted; half way between the xiphoid and umbilicus was heard a peculiar blowing sound—a bruit—no palpable tumor. July 3, examination of the stomach contents after Ewald's test meal; HCl—; Uffelmann's reagent after extracting with ether— + ; only the stomach tube was passed, but from the mucus present cultures were made and lactic acid demonstrated in the culture media. August 2, 1894. Boas' test meal; lactic acid .15 per cent; patient died August 3, 1894.

Extract from post-mortem record: August 6, 1894. Stomach contained 635 grams dark clotted blood; on posterior wall of the stomach was a large irregular fungating mass, reaching from the greater to the lesser curvature, not involving the cardiac or pyloric end. This involved the tail of the pancreas which was bound closely to the stomach wall. Pancreas only a portion normal tissue; the tail made up entirely of a grayish mass which was adherent to the posterior wall and a part of the tumor mass.

Diagnosis: 1, carcinoma of the stomach and pancreas;

2, retroperitoneal glandular involvement; 3, compression of the abdominal aorta.

(Signed) E. R. LeCount, M.D.
T. A. McGrew, M.D.
E. H. Ochsner, M.D.
H. W. Richter, M.D.
J. W. Walker, M.D., Recorder.

(To be continued.)

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.
NEW ORLEANS, LA.

(Continued from page 272.)

Chapter VI.

RELATIONS OF YELLOW FEVER TO SUNSTROKE.

The severer grades of yellow fever, attended with high temperature, reaching 108 degrees F., and over, and running a rapid course in two or three days to a fatal termination, present some symptoms in common with those cases of sunstroke in which the muscular and nervous prostration is accompanied with rapid and decided elevation of temperature. In cases of sunstroke, which occurred during the month of July, 1873, the temperature reached from 110 to 112 degrees F. in the axilla, at the time of death, and probably reached 115 degrees F. in the heart and internal organs. Similar elevations of temperature in sunstroke have been recorded by Dr. Bennet Dowler and others.

The phenomena of sunstroke appear to be dependent mainly upon the complex and unstable chemic constitution of the blood, and the dependence of the development of the physico-vital phenomena of the nervous and muscular forces, upon a definite degree of temperature. In common with other complex and highly elaborated organic fluids, which are continuously supplied with oxygen, the definite physical and chemical constitution of the blood can be maintained only within certain degrees of temperature. Unless a definite physical and chemical constitution of the blood be maintained, the necessary nutritive elements will not be supplied to the organs and tissues, and alterations in the secretions, and aberration of the muscular and nervous forces are inevitable. When the temperature of the blood rises above a certain point it is probable that a new series of chemic actions are developed; and compounds are generated which act as poisons to the nervous system. The rise of the temperature in the blood must also be attended with disturbances in the normal electric currents of the nerves and muscles. The great increase in the amount of carbonic acid, and the corresponding rapid consumption of oxygen in the blood must also be considered as important factors in the production of that state known as sunstroke. It is probable also, that as in certain cases of yellow fever, the center of the cerebro-spinal system which regulates animal temperature, as well as the vasomotor centers are involved. The derangement of these nervous centers is probably secondary to the chemical and physical alterations of the blood. It appears also, that the sudden failure of the heart, when the temperature of the blood rises above 110 degrees F., is due to the physical and chemical alteration and coagulation of the contractile constituents of the muscular fiber of the heart.

The remarkable phenomena of "sunstroke," "heat stroke" or "thermic fever," are most generally manifested in individuals working in intensely hot weather in ill ventilated apartments and cellars, in rooms artificially heated as in laundries, bar-rooms, wine cellars, and densely crowded tenement houses; in those addicted to the intemperate use of ardent spirits, in whom the capillaries of the brain are dilated and degenerated and the constitution of the blood deranged by the impairment of the functions of certain organs, as the liver and kidneys; and in teething children, exhausted by diarrheal discharges, and by the deranged reflex nervous actions, excited by the continuous irritation of the gums and dental nerves.

The foul air, loaded with the exhalations from the skin and lungs, and with carbonic acid, of the crowded houses of the poor, in narrow filthy streets, without doubt depresses the nervous and muscular forces, and prevents the proper maintenance of a definite temperature, by a free transpiration from the cutaneous and pulmonary surfaces.

The phenomena of sunstroke furnish conclusive evidence that mere elevation of temperature, apart from the action of any distinct febrile poison, may be the source of important changes in the blood, and fatal depression in the muscular and nervous systems. The phenomena of yellow fever and of other febrile diseases are rendered more complicated by reason of the disturbing agencies of the heat developed, and it is important that a thorough analysis of the blood, excretions and secretions in sunstroke be made, as forming a basis for the correct appreciation of the mere effects of temperature upon the blood and upon the nervous and muscular systems in yellow fever, independent altogether of the direct action of the febrile poison. Unfortunately, medical science is as yet without the necessary data for the institution of such an inquiry.

RESPIRATION IN YELLOW FEVER.

In many cases of yellow fever, the respiration is accelerated to a comparatively small extent; in cases of great severity, however, the respiration may be greatly increased in frequency, while the pulse may be even below the normal standard, and far below what is usual in other diseases with a similar elevation of temperature. The following cases present striking illustrations of the want of correspondence between the respiration, pulse and temperature in severe and fatal cases of yellow fever:

Case 1.—Yellow fever, black vomit, urinary suppression and death. G. H., age 33, laborer; native of Germany. Came on steamboat from St. Louis and had been in New Orleans one week before he was attacked. Entered hospital Oct. 11, 1873, at 4 P.M. Was vomiting black vomit when he entered. Sick five days before he entered the hospital, and in a state of nervous and muscular prostration and great capillary congestion. Black vomit abundant; gulps it up apparently without effort and squirts it on the wall and over the bed clothes. At 6 P.M. pulse 81, respiration 48, temperature of axilla 102.8. Complete suppression of urine, pain in epigastrium, delirious. Died next morning at 6 o'clock, fourteen hours after entering the hospital.

Case 2.—Yellow fever, jaundice, suppression of urine, black vomit, slow pulse, rapid respiration, death. J. A. H., age 30, native of United States, actor. Came down the Mississippi River on steamboat from St. Louis two weeks before his attack of yellow fever. Entered Charity Hospital Oct. 15, 1873, 5 P.M. Comatose; entire surface of a deep golden color; great congestion of peripheral blood vessels and capillaries; face of a purplish mottled hue; conjunctiva yellow and congested; pupils greatly dilated and incapable of responding to the stimulus of light; pulse small and

thready. Threw up black vomit in the wagon before entering the hospital; mustache and side of face smeared with black vomit. Oct. 16, 1873, 8 A.M., pulse 110; respiration 22; temperature of axilla, 102 degrees. 8 P.M., pulse 68; respiration 68; temperature 105.5 degrees F. Has passed no urine since entrance into the hospital. With the catheter, I drew off about one fluid drachm of yellow urine, loaded with albumen, bile and granular casts of tubuli uriniferi and excretory cells of kidney. Upon standing, the urine let fall a heavy deposit of urates. The patient died three hours after this observation, at 11 P.M.

It is worthy of note that in this case with a temperature of 105.5 degrees and respiration 68 to the minute, the pulse was only 68 beats to the minute.

I have observed a similar condition, viz., the pulse and respiration of equal rapidity in no case of acute disease; and in fact while the pulse may be greatly reduced in frequency when jaundice supervenes in malarial fever and in pneumonia, and while in many diseases there is no absolute correspondence between the temperature and rapidity of the heart's action within narrow limits; at the same time yellow fever is distinguished from other acute diseases by the frequency with which the pulse diminishes in rapidity after the establishment of the febrile excitement. This proposition will be established by a comparison of the pulse, respiration and temperature in various diseases with the observations already recorded with reference to yellow fever.

In addition to the large number of cases of various diseases, recorded in the first volume of my "Medical and Surgical Memoirs," the following cases are presented for immediate comparison and definite conclusions:

Case 1.—Erysipelas of head and face engrafted on malarial fever. Patrick O'Hern; native of Ireland; weight 160 pounds; height five feet eight inches; has been in the United States three years; admitted into Charity Hospital, Nov. 22, 1876, with intermittent fever, contracted several months before, in the swamps of Arkansas. The intermittent fever was arrested by the usual remedies. On December 8, the patient was seized with a chill followed by high fever, which continued without remission and on the 9th erysipelatous inflammation of the face appeared. The features became rapidly swollen and the inflammation which began on the left cheek rapidly invaded the integuments of the face and head. The bowels were freely opened by a mercurial purgative and quinin administered.

Date.	Pulse.		Resp.		Temp.	
1876	M.	E.	M.	E.	M.	E.
Dec. 10	. . . .	116	. . . .	28	. . . .	104 °
" 11	100	114	24	22	103.5°	104.5
" 12	104	112	28	24	104	105
" 13	100	108	24	36	103	103.5
" 14	112	112	28	33	103	104
" 15	104	92	28	32	101.5	103
" 16	92	96	28	32	101	102
" 17	90	108	24	34	100	101
" 18	96	100	28	36	99	102.5
" 19	80	96	24	26	98	101
" 20	84	80	27	32	99	99
" 21	80	80	24	28	98	98
" 22	88	80	27	24	98.5	98
" 23	80	68	28	28	98	99
" 24	68	76	24	28	98.5	100
" 25	68	80	28	24	98.5	99
" 26	88	80	24	24	99	98.5
" 27	76	. . . .	24	. . . .	99	. . . . .
" 28	63	66	24	20	99	99.5
" 29	72	80	24	28	99	98.5
" 30	87	96	28	28	99	. . . . .
" 31	76	. . . .	20	. . . .	97.5	. . . . .

On the 12th, the patient was placed upon the following:

R Quinia sulph . . . . . ℥i
Potassa chloratis . . . . . ℥ij
Acidi hydrochlorici dil. . . . . ♏xiij
Zinc ferri muriates . . . . . ♏iv
Aquæ menth. pip. . . . . f.℥ij
Mix.

Sig.: 30 drops in a wineglassful of water every four hours.

The local treatment consisted in painting the skin of the face and head, in advance of the line of inflammation with tincture of iodin. These measures finally arrested the progress of the inflammation and on December 20 the temperature of the axilla had fallen to 99 degrees F. The following table presents the relations of the pulse, respiration and temperature:

The recovery of this patient was satisfactory and complete and he was discharged in good health, capable of performing manual labor.

Case 2.—Erysipelas of face and head. John Toole; laborer; age 50 years; weight 180 pounds; height five feet ten inches; dark hair, dark eyes, dark complexion; admitted to Charity Hospital Dec. 23, 1876. Integuments of face bright red and greatly swollen. The swelling is so great as to completely close the eyes and to obliterate the features. Previous to coming to New Orleans had worked on the levees, near Donaldsonville. Has a scar on the left side of the head caused by a blow about three weeks before. This injury appeared to be the exciting cause of the erysipelatous inflammation. The treatment of this case was similar to that instituted in the preceding case, and with like favorable results. The inflammation gradually subsided and after the complete restoration of health the patient was discharged. The following is the record of the pulse, respiration and temperature:

Date.	Pulse.		Resp.		Temp.	
1870	M.	E.	M.	E.	M.	E.
Dec. 23	80	76	16	24	98 °	100.5°
" 24	80	80	20	24	98.5	100
" 25	72	72	16	16	96	95
" 26	56	68	16	16	94	96
" 27	58	. . . .	16	. . . .	96.5	. . . . .
" 28	65	54	16	16	98.5	98.5
" 29	64	60	13	12	99	97

Case 3.—Rubeola, dark purple eruption, high temperature, death. John Chilton; native of New Orleans; age 17; laborer; height five feet; weight 100 pounds; dark brown hair, gray eyes, dark complexion, sharp features; entered Charity Hospital Dec. 20, 1876. Patient states that he had been seized on the morning of the 9th inst. with a severe rigor, followed by intense fever, accompanied by pain in the head and back. December 11, 8 A.M., I saw the patient for the first time; face and surface generally greatly congested, presenting a purplish mottled appearance. Pulse 155; respiration 40; temperature of axilla 105 degrees F. Left lung congested; dull upon percussion, with physical signs of pleuro-pneumonia. Painful cough and respiration. Evening, rash over entire surface of a deeper color and of more distinct appearance; left lung and lower lobe of right lung congested. Pain, cough and jerking labored respiration. 8 P.M., pulse 156; respiration 47; temperature 106 degrees. Alcoholic stimulants, quinin and nutritious diet were ordered, but appeared to produce no beneficial results; neither was the local application of turpentine in the form of stupes attended with any diminution in the severity of the pulmonary symptoms.

December 12, A.M., pulse 142, respiration 39, temperature 104.5 degrees F.; December 12, P.M., pulse 129, respiration 42, temperature 105 degrees F.; December 13, A.M., pulse 124; respiration 35; temperature 104.5 degrees F.; December 13, P.M., pulse 136, respiration 36, temperature 105 degrees F.; December 14, A.M., pulse 144, respiration 36, temperature 104.5 degrees F.

On the morning of December 14, the patient presented a livid appearance; great difficulty in breathing, dark blotches on his body running together, but more defined on arms, legs and feet. Tongue, which had been heavily coated, peeling off, leaving a raw surface. Intense thirst, feeble fluttering pulse. Died at 10 P.M.

Case 4.—Intermittent fever, congestion of right lung. K. Orbison; age 26 years; height five feet eight inches; light hair and blue eyes; native of Chicago. During the past summer was exposed to malaria in Mississippi and entered the Vicksburg hospital with chills and fever. Entered Charity Hospital on December 27, with high fever, furred tongue and congestion of lower lobe of right lung. The internal administration of quinin and Dover's powder (2 grains of each every three hours) and of the tincture of yellow jessamine (10 drops every three hours) and the local application of turpentine over affected lung, were attended by the resolution and disappearance of the pulmonary congestion. On January 5, the patient suffered with another paroxysm of fever which yielded readily to quinin. The following observations were recorded:

December 27, pulse 120, respiration 30, temperature 104

degrees F.; December 28, pulse 112, respiration 28, temperature 98 degrees F.; December 29, pulse 94, respiration 28, temperature 100 degrees F.; December 30, pulse 78, respiration 27, temperature 99 degrees F.; December 31, pulse 80, respiration 24, temperature 98 degrees F.; January 1, 1877, pulse 72, respiration 22, temperature 98 degrees F.; January 2, pulse 70, respiration 24, temperature 98; January 3, pulse 90, respiration 30, temperature 99 degrees F.; January 4, pulse 72, respiration 24, temperature 99 degrees F.; January 5, pulse 130, respiration 28, temperature 105.5 F.

Case 5.—Chronic malarial poisoning, general anasarca, ascites. Edwin Toll; age 39; admitted to Charity Hospital March 3, 1877. Native of Philadelphia; mechanic. Has been in Louisiana twelve months and has been living in the swamps of Quehito Parish. With the exception of syphilis twelve years ago, has enjoyed good health, up to August 1, 1876, when he was attacked with chills and fever, "swamp fever." The chills have continued at intervals up to present time. Pale, anemic, with greenish-yellow tinge of surface. Spleen enlarged and painful upon pressure. Abdomen distended with liquid. Extremities, especially the legs and thighs greatly swollen and pitting deeply upon pressure. Urine high colored, moderately abundant, but free from albumen. It is probable that the liver has been deranged by the action of malaria, as well as by alcoholic stimulants, which he is said to have used in excess. Much benefit was derived from the following combination:

R Quinia sulph . . . . . ℈i
Pulv. digitalis. . . . . .
Pulv. scilla . . . . . ää grs. v
Extract rhei. . . . . .
Extract aloes . . . . . .
Extract colocynth comp. . . . . .
Gamboge . . . . . ää grs. x
Mix.

Divide into ten pills; one pill every six hours.

The action of the kidneys was promoted by cream of tartar in drachm doses, three times a day. After the bowels were freely moved by the preceding measures, the tincture of bark and quassia, together with quinin and iron were freely used and with marked benefit. Under these measures the dropsical effusion disappeared and the complexion assumed a healthy appearance. The following observations were recorded:

Date.	Pulse.		Resp.		Temp.	
1877	M.	E.	M.	E.	M.	E.
March 5	92	93	20	22	98 °	100 °
" 6	78	90	18	24	99	99
" 7	80	86	22	22	98	99.2
" 8	86	85	22	22	98.2	99
" 9	84	86	22	23	98.2	99
" 10	85	86	23	24	101	100
" 11	76	78	22	22	99	99
" 12	80	. . . .	23	. . . .	98.2	. . . . .
" 13	82	. . . .	23	. . . .	98.2	. . . . .

Case 6.—Acute mania; general paralysis of lower extremities. Patrick J. Fitzpatrick; age 40; native of Ireland. Has resided in New Orleans thirty years. Admitted to Charity Hospital, Feb. 20, 1877. Can give no coherent account of himself. Laughs, cries, screams, crows like a cock, preaches and talks wildly and incoherently. Religion and military affairs appear to occupy his mind chiefly. Ofttimes repeats the prescriptions, as I give them to the student, passing from bed to bed; hearing appears to be very acute. Does not rest at night; can not stand on feet but falls forward. Blisters to back of neck and bromid of potassium and hydrate of chloral, as well as minute attention to the condition of the bowels appeared to afford some relief and to moderate the ravings to some extent. The case, however, appeared to be but little improved when I gave up the case on March 15.

The following observations were recorded: March 8, pulse 100, respiration 24, temperature 99 degrees; March 9, pulse 100, respiration 25, temperature 99 degrees; March 10, pulse 98, respiration 24, temperature 99 degrees; March 11, pulse 80, respiration 24, temperature 99 degrees; March 12, pulse 85, temperature 98.2 degrees; March 13, pulse 85, respiration 24, temperature 98.2; March 14, pulse 88, respiration 24, temperature 99 degrees.

Case 7.—Double pneumonia supervening in malarial fever. James Rooney; native of Ireland; age 30 years; light complexion; weight in health 165 pounds; height five feet eight inches. Stone cutter by trade; has been in America four years, but has not worked at his trade during this time. In November, 1876, he obtained work on the Jackson railroad, and labored in mud and water up to his knees. Two weeks after beginning work in the swamps, was seized with chills and fever, and returned to New Orleans. Was sick one week before entering the hospital and during this period had little or no attention. Admitted to Charity Hospital, Jan. 24, 1877. I saw him for the first time on the 25th; found upon examination that the entire right lung and the lower portion of the left lung were completely solidified. All respiratory sounds with the exception of the tubular breathing were absent from the right lung. Expectoration very scant; respiration hurried; great congestion of face, with purple lips and tongue; rapid pulse and high temperature; absence of chlorids from the urine.

Notwithstanding the unfavorable and almost hopeless aspects of this case, the persistent use of quinin, Dover's powder, and alcoholic stimulants, carbonate of ammonia and nutritious diets and the local application of turpentine, were attended with marked improvement of the symptoms. The chlorids returned to the urine, the left lung was restored and portions of the right lung manifested crepitant, subcrepitant and mucous râles. A large cavity found in the superior and middle lobes of the right lung. During the breaking down of the lung tissue, the patient suffered from hectic fever, profuse sweats and great exhaustion. Convalescence although slow was finally and completely established.

The following observations will illustrate the relations of the pulse, respiration and temperature in this grave case:

Date.	Pulse.		Resp.		Temp.	
1877	M.	E.	M.	E.	M.	E.
Jan. 25	120	105	36	28	104 °	103.5°
" 26	112	108	28	32	101	101.5
" 27	104	108	28	28	101	102
" 28	100	100	28	32	100	103
" 29	96	100	32	28	100	101
" 30	96	100	28	32	100.5	102
" 31	84	92	28	24	100	100
Feb. 1	84	80	28	28	100.5	100.5
" 2	96	92	28	28	99.5	101
" 3	76	92	28	32	100	101
" 4	84	. . .	36	. . .	100	. . . . .
" 5	84	96	24	28	100	101
" 6	96	108	28	28	100.5	101.5
" 7	104	108	28	32	100	101.5
" 8	104	112	28	36	100	101
" 9	104	104	24	28	100	101
" 10	92	. . .	28	. . .	99	. . . . .
" 11	. . .	120	. . .	28	. . .	102
" 12	108	112	28	24	100	101.5
" 13	100	. . .	32	. . .	100	. . . . .
" 14	112	120	28	24	99.5	101.5
" 15	120	116	28	25	100	101
" 16	100	100	28	32	100	99
" 17	100	. . .	26	. . .	99.5	. . . . .

(*To be continued.*)

NERVOUS DISEASE IN EARLY SYPHILIS.

Read before the Chicago Academy of Medicine, October, 1894.

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(*Concluded from page 276.*)

Wille, several years ago, made an exceedingly valuable analysis of the psychoses due to syphilis, which he found were divisible into the following classes: 1, irritative psychoses based on cerebral anemia following syphilitic infection even from its very beginning; 2, simple inflammatory psychoses due to meningitis and cerebral softening; 3, neoplastic psychoses proceeding from cerebral meningeal gummata. Griesinger states that when acute mental disease affects patients during the secondary stage of syph-

ilis, it will be chiefly those whose brain is organically affected, who have previously presented symptoms of abnormal cerebral activity or who come from neurotic families.

Wille says that mental symptoms may appear two months, or even two weeks after infection, certainly with the onset of the secondary symptoms. Hildebrand has had very similar experience.

Leubuscher was the first to establish the existence of mental symptoms during the secondary period. Prior to his article these had been regarded as tertiary accidents.

Berthier, some twenty-seven years ago reported several acute cases of insanity occurring during the secondary period. Fournier has described several cases of insanity, due to secondary syphilis, varying in type from confusional insanity to cataleptoid states.

Mickle has observed several cases of insanity due to secondary syphilis in which the psychic effect of syphilis was similar to that of alcohol. Clouston substantially agrees with Wille. He says the psychoses occur in the secondary stage of the disease, coincidentally with the eruption, and are curable and rare.

Cadell reports a case characterized by mental excitement and restlessness which reached its height seven months after the initial lesion, and five months after the appearance of the secondary symptoms, with the onset of which the mental symptoms began. This case consisted of a confusional delirium. The patient slept but little, but rode recklessly about at night. A year later melancholia has set in, accompanied with paralysis of energy, so that the patient scarcely left his bed. He at length made a good recovery.

Savage states that constitutional syphilis acts by causing gummata, by producing arterial disease, by producing local degenerations, or by causing a cachetic state. Regis states that the psychoses of secondary syphilis occur on the appearance of secondary accidents accompanied with fever, principally at the time of the eruption. The onset is more or less brusque, and takes the form of acute or subacute mania or melancholia, preferably mania; it is sometimes of a circular type. It is usually of short duration, disappears with the febrile manifestations to which it is due and readily yields to mercurial inunction.

Luys, admitting that mania, melancholia, and hallucinatory confusion can occur, asserts that these are but the epiphenomena of a morbid process in evolution.

Kiernan's own cases are of great interest:

Case 1, was that of a 35-year-old Canadian, a periodically drinking tailor, of criminal antecedents and parentage. A sister and aunt are prostitutes. One brother is idiotic and one a professional burglar. Four weeks before admission he had contracted the initial lesion, which healed up without any treatment. Two weeks before coming under care he was very morose and irritable, felt chilly sensations all over the body, and was very languid. Six days before coming under care he was attacked by a very intense fever, and on the following day complained of insects crawling beneath his flesh, and of men being at the window with guns to shoot him. He was markedly terrified. When he came under observation he had a temperature of 104.9. He was markedly agitated, constantly in motion, and had an expression of extreme terror. He was ordered:

R Ex. conii. . . . . fl
Ex. hyoscyami . . . . . fl
Chloral hydratis aa.2.00

M.S. At a dose, in water thrice daily.

Quinin was given in 10 grain doses thrice daily, but neither this or the sedative had any effect on the mental symptoms of the fever. On the third day the history already narrated was obtained, whereupon the attendant was ordered to rub 30 grains of mercurial ointment into the armpits and clefts of the thighs. During the following night the patient slept with relative comfort; his temperature fell to 98.3. He was less agitated, but retained his delusions, and was very little inclined to remain alone. This treatment continued two days, the temperature and mental state remaining the same. The third day after this a roseolaceous eruption appeared on the forehead and neck. This was at first a simple roseola, but in twenty-four hours became pustular and gradually melted down into dark brown crusts, flattened and depressed which, when removed, showed a grayish film bathed in pus underneath. The attendant, soon after the appearance of the last, neglected to rub in the mercurial ointment, whereupon the patient's temperature rose to 103.6, and he became violently excited, rushing wildly from one room to another, saying that he was about to be shot, and that spiders were eating his brain. His countenance expressed terror and he was always in motion. As a means of restraint to secure treatment, a sheet was smeared in mercurial ointment, the patient was wrapped in this and then confined in a camisole. The next day his temperature fell to 101.7. Although still retaining his delusions he was much more at ease and less agitated than he had been since his admission. Treatment was continued three weeks. The mental disturbance became less and less marked. The eruption began to cicatrize, and finally healed up in places, leaving thin red lines radiating from the center. The delusions grew less and less vivid until they seemed to the patient but dreams of an unpleasant nature through which he had passed. He retained some gruffness and irascibility, but this was evidently natural to him and not insanity of manner. He made a good recovery and remained in good health.

Case 2.—A baker, 25 years old, a moderate drinker, had a brother who died insane, and a sister under treatment in an insane hospital. When he came under observation he was very much agitated and had well marked auditory and visual hallucinations. He saw spiders crawling over him, and guns protruded from holes in the wall to shoot him. He heard wolves and lions howling and roaring at him. He kept always in motion, but by dint of great effort could control himself and give a few relatively rational answers to questions. After recovery he gave the following history: Four weeks before coming under treatment he had contracted a chancre. About the beginning of the fourth week after this he had a distinct chill followed by a high fever. Believing this to be the onset of malaria, but feeling unaccountably depressed, he took 10 grains of quinin and visited Central Park. While there he was so frightened at the howling of the wolves that his companion was obliged to draw him away to avoid attracting attention. This scene was repeated before the lion's cage. He was not afraid of the animals, but of their howling. On his return home he became exceedingly delirious and cried out about wolves and lions. In two days hospital treatment became necessary. On admission he had a temperature of 104 degrees. He was fairly nourished. He was rather loquacious, which loquacity was at times broken in upon by his hallucinations. He was ordered the same treatment as in the previous case, which was without effect. The fourth day of treatment a roseolaceous eruption made its appearance on his forehead around the roots of his hair. The patient was ordered a mercurial ointment applied as in the other case. In twenty-four hours his temperature fell to 99.8 degrees. He was much quieter, but retained his delusions and hallucinations. The next day a similar eruption to that described appeared on the arms and trunk, which gradually formed flat pustules. These became covered with greenish-brown crusts, which when removed, showed a grayish-red ulceration beneath, and were surrounded by a copper-colored areola. The delusions and hallucinations grew less vivid for the next two weeks. By the time of the total disappearance of the eruption (at the beginning of third week) they disappeared also, leaving the patient in a dazed condition. He remained relatively stationary for about two weeks, when he gradually brightened up, and recovered, four months after admission.

Case 3.—An Irish American, 32 years old, came under my care with a decided corona veneris and temperature of 103½ degrees. He was in a state of hallucinatory confusion similar to those cases already described and he was wrapped up in a mercurial ointment sheet. The eruption pursued the usual course. With its gradual fading the vividness of the patient's

hallucinations—which chiefly related to locomotives behind him—grew fainter, and his motor agitation grew less. Two months later he had passed into a cataleptoid state; from this he emerged into a state of maniacal exultation with a verbigeration resembling that of katatonia. This passed into a state of depression lasting a month. From this the patient recovered and has since remained well.

Kiernan comments upon these cases as follows:

"These cases resemble those of Cadell and Mickle. Their symptoms do not agree with those found by Leubuscher, Albers, Englested, and Gros, in that in none was to be found any evidences of hypochondria or of syphilophobia, but certainly these are present in other psychoses and may be produced, as Leidesdorf and Savage have shown, by moral causes alone in luetic cases. I do not believe that these cases should have a place otherwise than with the confusional insanities, and this view is also held by Regis. They are simply the result of a systemic exhaustion which, as I have elsewhere shown, is produced by many causes."

To the mind of the author of the present paper, the toxin view of such cases is the most logical one. An instability of cerebral structure and function, moral and mental influences, alcohol and previous cerebral irritation from any cause whatever, may act as the factors which determine the toxemic process to the brain, but the intoxication of the brain by syphilitic toxins, is probably the essential factor.

My friend Dr. Norbury, late of the Central Hospital for the Insane at Jacksonville, Ill., has reported two cases occurring during secondary syphilis, one of which was associated with a primary sore which had not yet disappeared. As both cases are complementary to the series which I have to report I take the liberty of presenting them in full:

Case 1.—A man, aged 21 years, who contracted syphilis three months previously. A phagedenic ulcer had formed, and was not quite healed when first examined. There was general enlargement of the gland, mucous patches in the mouth, and a pustular inflammation of the forehead. He was then under treatment for syphilis, and had been for some time, so that the manifestations of the disease were modified by the mercury he was taking. The cerebral symptoms were, briefly: insomnia, headache, followed by somnolence, and later by a somnambulistic state. The last condition was first noticed while attending a party. He had a severe attack of headache, with vertigo, asked permission to lie down, was shown a bedroom, and his recollection ends with his lying upon the bed. He reappeared in the dining room after a short absence, and much to the astonishment of all, was quite devoted to a young lady with whom it was known he had previously quarreled. She could not account for his devotion, excepting by the belief that he had been drinking. His friends, fearing that such was the case, invited him to remain all night. In the morning, when told of his reappearance on the floor, and his attention to the young lady, he denied all recollection of it whatever, and accused his friends of joking. He further denied taking liquor of any kind.

Ten days later a similar attack, with the same prodromes occurred. On this occasion he left home, and when he regained consciousness found himself in a hotel in a city forty miles distant. How he came there, how long he had been away from home, or what he had been doing he knew not. He returned home, and in a few days later renewed the trip. This time it was forty-eight hours before he regained consciousness. As before, he had no recollection of what had occurred. A third time he started for the neighboring city, but was overtaken by his brother at the railroad station. When accosted by his brother he appeared natural in his behavior, but was not subject to external influences, was seemingly in deep thought, was more or less automatic in his movements, and would not converse. When he regained consciousness he was greatly surprised to learn what he had done.

When Dr. Norbury saw him on the next day, he was worried, melancholic, and self-accusative. After satisfying himself that it was undoubtedly a case of syphilis, the Doctor put him upon the iodid of potassium, and also directed him to continue the mercury. About three weeks later he reported again, saying that he had not been troubled since he first saw me, excepting with headache, lasting for a short time. He stated that he contemplated going to Hot Springs, Ark., and this was the last time the doctor saw him. It has since transpired that he returned home in due time, very much benefited, and is now in a normal mental condition.

Dr. Norbury's remarks upon this case are of interest. It is worthy of comment that he entertains essentially the same views as myself regarding the possible importance of vasomotor disturbance in early cerebral syphilis.

"The strangeness of the symptoms, the departure from the ordinary type of organic disease, and the somnambulistic manifestations, all point to some perversion of the circulation, or an abnormal condition of the blood itself, affecting the supreme cerebral centers. If the cause was perverted circulation, we do not know the actual condition of the brain under these circumstances. It is reasonable to conjecture that alteration in the cerebral circulation was the cause, when we consider the distribution of the arteries and the physiology of sleep.

"The arteries which supply certain areas of the convolutions may be affected, causing activity of the circulation in these vascular areas, and as a result, somnambulistic dreams. The affection of the arteries may be either vasomotor disturbance, or cell proliferation within the walls of the vessel of the pia, causing diminution of the circulation, and consequently, malnutrition and lessening, or perversion of the functional activity of the ganglionic cells in the underlying brain substance. If such is the case, the observation of, and comparison with, other cases might lead to localization of the mental faculties."

Case 2.—Late secondary phenomena. A man, aged 23 years, single (history defective.) For six months prior to his admission to the Illinois Central Hospital for the Insane he was confined to his bed at home. When admitted he was feeble and emaciated, his circulation was poor, and bowels constipated. The mental symptoms were those of acute primary dementia. He had not spoken for several months, stared vacantly, and apparently was not conscious of his surroundings. He was filthy in his habits, had an inordinate appetite, and would eat anything, including his own feces. No history of syphilis was given by his friends, but evidences of primary lesions were marked. Secondary manifestations, such as thinning of the hair of the scalp and skin eruptions, resembling psoriasis on the posterior surfaces of the lower extremities and on the anterior surface of his arms were present. No marked superficial symptoms were shown.

Acting on the supposition that the case was one of syphilis, I immediately put him on anti-syphilitic treatment. No marked change occurred for several weeks, except a gradual improvement in his general health. At the end of three months he had improved so much that he was able to dress himself and attend to his wants, and was interested in his surroundings. Ataxic aphasia soon took the place of the complete aphasia which had prevailed for six months. This gradually faded away with the improvement in his general mental condition, and he was able to converse rationally, his articulation becoming perfect. He then gave me a history of syphilis contracted two years before. The primary lesions were slight, and he had no recollection regarding the appearance of the secondary phenomena. He was discharged cured, so far as his insanity was concerned, six months after admission. He has gained forty-five pounds in weight, and has all the indications of good health. He is now married, and follows his trade, that of a painter and decorator in Chicago. One and one-half years have elapsed since he was discharged, and yet he has had no evidence of a return of the disease.

Regarding this case Dr. Norbury says: "The case is interesting because of the long duration of functional disorder of the brain, and the subsequent com-

plete recovery, with no evidence whatever of organic change. The pathology of the case can probably be explained by conditions similar in nature to those in the preceding case, namely, an arteritis not sufficient to produce organic changes, but so far advanced as to affect the nutrition of that part of the brain presiding over the intellectual faculties. The co-existing aphasia locates the disturbance in the vicinity of the Sylvian artery, for we all know that impairment of speech is due to the involvement of the terminal branches of that artery."

Although the date of the appearance of brain symptoms in Dr. Norbury's second case was two years after the chancre, it still must be classed as an early lesion of syphilis, inasmuch as it was associated with typical secondary lesions. It must be remembered in this connection, that the duration of the disease is not always a criterion of the period at which the evolution of syphilis has arrived.

Eruptions characteristic of the secondary period may appear very early, or they may be retarded until long after their usual period of evolution. The point to which the evolutionary progression of syphilis has arrived, is often a better criterion of the pathologic age of the disease, than the period of time since infection.

TREATMENT OF NERVE DISEASE IN EARLY SYPHILIS.

The treatment of nerve disease in early syphilis is well understood to be that of the specific affection upon which it depends, hence a discussion of the therapeutics of the subject may seem to be a work of supererogation. There are, nevertheless, numerous highly practical points which are quite generally overlooked.

Prophylaxis of nerve disorder is an important feature in all cases of syphilis. It is to be remembered that the nerve disturbances of the early period are not only important *per se*, but they may constitute the point of departure for later and more serious disease. It is well also to bear in mind that certain factors may produce nervous disturbances which do not at the time produce symptoms, but which none the less lay the groundwork for serious organic nervous disease at a later period.

Inasmuch as vasomotor neurosis is probably an important factor in syphilitic nerve phenomena, avoidance of all causes of disturbances of the sympathetic is a prime indication. Instability of vasomotor equilibrium may often be avoided. Most surgeons are aware that tobacco and liquor are injurious to syphilitics, but comparatively few could give other than empirical reasons therefore. The toxic effect of these drugs upon nerve protoplasm and upon the sympathetic ganglia is a very powerful predisposing factor in brain and nerve disease in syphilis. By them the foundation is often laid for subsequent disease of a very serious or even fatal character. Mental worry or overstrain, mental excitement and sexual excesses constitute powerful predisposing factors,—especially to cord disease. If the patient be given a clear understanding of the true reasons for abstinence from these injurious factors he is likely to be much more tractable. In cases with a distinct neuropathic taint, hereditary or otherwise, the points which have been made are of special importance.

The curative treatment is in the majority of cases mercurial, first, last and all the time, but there are certain special therapeutic features which are of greater importance than in other phenomena of syphilis. In the ordinary forms of syphilitic phenomena, a moderately active course of treatment usually suffices and a few days delay in getting the disease well in hand, is of no consequence. When nerve involvement exists, the treatment must be very energetic indeed, if we would avoid irreparable damage to delicate and important nerve and brain structures. The problem in such cases is, how to get the patient under the full physiologic effects of mercury most speedily. As a rule, internal medication alone can not be relied on; some patients and especially those with nerve phenomena can not tolerate the internal use of the drug at all. The hypodermic method is much quicker and more reliable, but not all patients will submit to it. Taken all in all, the inunction method usually proves the most satisfactory. Where practicable, the internal use of the protiodid is combined with it. A point of practical value is the fact that the drug acts best when applied as nearly as possible to the location of the nerve implication. Inunction of the neck and scalp are most efficacious in cerebral disturbance, while inunction of the region of the spine is quite effective in cord symptoms. It is necessary to practice inunction elsewhere, in order that a sufficient quantity may be absorbed.

Cases are met with in which mercury seems to be ineffectual and we are compelled to use the iodids. Such cases are rare, so rare that I suspect some of them to be instances in which the fault lies, not with mercury, but with the manner of its use. While the mainstay of treatment is mercury, there are certain adjuvants which are of great value. It very often happens that a case which appears resistant to mercury, yields quite readily when some one or more of the adjuvant methods are used.

As regards the general treatment, hot baths and laxatives constitute the most valuable accessory measures. The hot bath is especially useful, and is too often forgotten. Measures of counter-irritation and derivation are often of value in early nerve syphilis. Local or even general depletion may be justifiable. If I were to treat several of my cases over again, I should certainly apply leeches to the neck and possibly even perform venesection. Depletion certainly seems logical enough to warrant a trial. Electricity, massage and counter-irritation are often of service in bringing under subjection stubborn symptoms with a tendency to chronicity.

It has occurred to me that we have specialized too much in our management of syphilis. We are so imbued with the view that mercury is the only remedy for the disease, that our treatment is likely to consist of mercury throughout. A remedy which appears to me to be of great service in syphilis is gold. It has been my custom until recently, to prescribe the double chlorid of gold and sodium from time to time in nearly all my cases of syphilis. It has seemed of special value as a tonic and alterative in cases with a tendency to nerve involvement. Gold is a remedy which has been greatly neglected, and it is a matter of surprise that so few good preparations of of the metal are on the market.

Within the past few months I have been using the bromid of gold and arsenic and bromid of gold and mercury—(Barclay's formulæ) instead of the sodium salt, and with gratifying results. The gold seems to have a special effect preventing sclerotic changes in

the tissues affected by the syphilitic neoplasm. The bromid in the combination may be of service in correcting vasomotor perturbations which probably exist in early nerve syphilis.

It is not my custom to advocate special preparations or formulas, but there is another preparation which I do not hesitate to recommend as a tonic and alterative in syphilis, especially where nerve disturbance exists. The preparation known as the three chlorids of mercury, iron and arsenic, (Renz and Henry's formula) has in my hands proved a reliable addition to the therapy of syphilis. It has the merit of elegance and definite dosage.

The question now arises, How long shall this treatment be continued? As a matter of principle, I believe that any course of treatment of less than three years duration is open to criticism. I am especially inclined to be dogmatic in regard to cases presenting early nerve or brain symptoms.

I have been much impressed by some of Mr. Hutchinson's cases of nerve syphilis. It appeared to me that some of them might have been avoided by proper management. Hutchinson's treatment is largely symptomatic. If at the end of a six months' course the symptoms have disappeared, treatment is stopped, to be resumed only on the recurrence of symptoms. Steady systematic treatment by mercury, iodids and gold, is the sole assurance of safety for the syphilitic.

As for the results of this plan I have only this to say: After some years of experience with syphilis, I have rarely seen of late, visceral, bone, nerve, or brain involvement in cases in which my instructions have been carried out to the letter. Cases occasionally arise in which a tonic stimulant becomes necessary. Under such circumstances, I have found the wine and fluid extract of coca of great service.

Anemia is sometimes a very important factor in early nerve syphilis. Such cases demand iron and strychnia. The iron may sometimes be combined with the mercury in the form of the pil. duo (mercurial pill with exiccated sulphate of iron). Some cases may require alcoholic stimulants in small amount.

Great care should be exhibited in the management of debilitated syphilitics, else harm may be done by our specifics.

A SET OF UTERINE DILATORS.

BY HENRY T. BYFORD, M.D.

[From the Transactions of the Chicago Gynecological Society, Jan 18, 1895.]

I have here a set of uterine dilators, designed for the purpose of keeping the cervix moderately dilated

and thus maintaining uterine drainage in cases of endometritis with imperfectly developed or contracted cervices. These are stiff in the center, but will bend quite easily on the end. They can be used in a retroverted or an anteverted uterus. In my office practice I use the two smaller sizes, and the larger ones after curettage to keep a poorly developed cervix dilated until the tendency to contract passes off. It is passed through the internal os twice a week, for a few times, and later once a week until the dilatation has been maintained for three or four months. The vaginal fornices should be cleansed with a 5 per cent. solution of carbolic acid before they are introduced and an intra-uterine application of a 25 per cent. solution of ichthyol in glycerin be made after their withdrawal.

SOCIETY PROCEEDINGS.

Proceedings of the First Meeting of the American Academy of Railway Surgeons.

Held at the Grand Pacific Hotel, Chicago, Ill., Nov. 9 and 10, 1894.

(Continued from page 212.)

FIFTH SESSION, SATURDAY, NOVEMBER 10, 2 P.M.

CHAIRMAN DR. H. J. MAYNARD read a letter from Dr. M. Cavana, Surgeon N. Y. P. & O. R'y, Oneida, N. Y., expressing his regrets that on account of serious sickness in his family he was unable to be present but wished the Academy Godspeed.

The Academy then went into executive session to consider the applications of Drs. C. B. Parker, Surgeon, L. S. & M. S. R'y, Cleveland, Ohio: R. H. Taylor, Surgeon, Central R'y of Georgia, Griffin, Ga.; Geo. W. Crile, Surgeon, C. C. C. & St. L. R'y, Cleveland, Ohio; J. G. Davis, Chief Surgeon L. N. A. & C. R'y, Chicago, Ill.; A. D. Bevan, Chief Surgeon, Iowa Central R'y, Chicago, Ill.

The ballot having been cast it was found that all of the gentlemen named had been elected to fellowship.

THE USE OF HORSE HAIR IN SURGERY.

BY C. M. DANIELS, M.D.

CHIEF SURGEON W. N. Y. & P. R'Y, BUFFALO, N. Y.

In presenting this subject I lay no claim to originality in the use of horse hair in surgical practice as it was suggested to me ten years ago; but having used it extensively during the period mentioned, and not having seen the subject referred to but once in surgical literature, I venture to present this paper which will certainly be commended for its brevity.

For many years, surgeons have been faithfully searching for the ideal suture, one that would be non-irritating, small in caliber, easily adjusted and afford the closest approximation of the skin layers, and this with especial reference to wounds of the face or exposed parts where the avoidance of scars, more or less unsightly, is a great desideratum.

Catgut, silk and silkworm gut have long been used, but in the first we have a rapidity of softening and relaxation that will not infrequently result in a gaping wound. In the second, the resulting "stitch marks" which are frequently long in disappearing added to the occasional irritation, and in the silkworm gut the rigidity of the suture itself makes each undesirable in superficial wounds and all usually require dressings or coverings held by bandages which are both disagreeable and cumbersome, especially when the patient is able to be about or upon the street. I speak with special reference to those wounds which in themselves are not serious enough to confine the patient, this being the class of cases where I feel free to recommend horse hair sutures and upon which I note the following points:

1. Instead of a large or medium sized needle as required with even small strands of catgut, silk or silkworm gut, with the horse hair a small eye needle, curved or straight, according to the preference of the surgeon, can be used and thus minimize the size of each puncture of the skin.

2. Horse hair, when prepared as I will suggest later, has a firmness that will give support to the skin and very materially aid in keeping in approximation the edges of the same, and more nearly resemble silkworm gut in its action in the tissue.

3. Where wounds are both lacerated and contused, with

the fine needle, we can pick up many small but valuable parts which may be saved by gentle adjustment, and I will mention here that success, in any case, depends upon the care used in the introduction on one side, and exit on the other, of the needle near the margin of the cut or torn surface which should always be at right angles to the incision or skin margin, so that when the tie is made the strand will be of the same length upon the under as upon the upper side, and at a little to one side of the wound line.

4. Horse hair sutures can be placed much closer together than other suture material, with less danger of strangulation of the skin margins, this in itself better assuring perfection of adjustment and more satisfactory results and a "reef" or "granny" knot only is required being smaller than the ordinary surgical tie.

5. Horse hair *will not* bear any great amount of tension and could hardly be recommended for use in the flaps after a major amputation, except to place between other sutures for the purpose of more carefully approximating the skin margins.

6. After the introduction of horse hair, the skin being accurately adjusted and operation having been performed under the aseptic surgical procedures of to-day, except in extensive injuries, no dressing is required other than carefully drying the parts and brushing over with a layer of aseptic flexible collodion which, as it dries, will aid the horse hair in holding the skin in position.

With special reference to facial wounds, the field for the fastidious surgeon is here a great one, as horse hair at almost any hue of fast colors can be obtained, and he can place almost invisible stitches, from the color of the skin of the albino to that of the darkest African.

And now a word relative to the preparation of horse hair for surgical use: The convenience of the stable places it in every surgeon's hands and the hair needs only a thorough washing with soap and water, then for two or three days in 1 to 1,000 hydrarg. bichlor. solution and transferred to 95 per cent. alcohol until used. I believe that when this material is more generally used and appreciated that surgical supply houses will place it upon the market, and I have already made such a suggestion to one of them and without hope of future reward.

DISCUSSION.

DR. R. S. HARNDEN, Waverly, N. Y.—The use of horse hair as a suture is to me a recent thing, and only by the advice of Dr. Daniels did I begin its use, something like a year ago. The Doctor gave me sutures at a meeting of the Academy of Medicine in New York. I tried it, and while I feel like praising the suture, I would at the same time speak of its disadvantages. While it has many admirable qualities mentioned by the Doctor, the only objection to it that I could find is, that if you are not careful in using it in a wound that is likely to be attended with any tension, you will be disappointed in it as a suture. Bearing that point in mind, it is a valuable adjunct to our sutures.

DR. J. F. REGER, Littleton, W. Va.—A year or two ago I picked up a copy of the *British Medical Journal* and saw something in reference to the use of sterilized horse hair for injuries of the face, and I have had an opportunity of using it three times. I have found one thing, that whatever degree of tension you give the sutures in placing them you will retain that same degree of tension throughout the healing of the wound, as it never relaxes a particle that I have ever found, and it makes absolutely no stitch scar. While there may be some disadvantages in connection with its use, I have not as yet encountered them. I have found it excellent material for face wounds where we desire to avoid an unsightly cicatrix.

DR. A. C. SCOTT, Temple, Texas—When I was asked to discuss this paper, my first thought was to refuse to do it, inasmuch as knew so little about the subject. But I concluded that it would not be right to back down on an invitation of this kind, because I do not believe in backing down. I have never backed down but once in my life, and I do not want to do so in connection with the work of this Academy. I concluded that it would be better in attempting to discuss a paper of this kind to know very little about it in the beginning. One could receive the points in this paper as they were put forth with an unbiassed mind. However, as soon as I came to Chicago I went to one of the public libraries and tried to find something on the subject, but found it was exceedingly difficult to do so in order to get anything satisfactory out of it. I find that horse hair ligatures are mentioned as a sort of side issue whenever the subject of ligatures is under discussion. It is mentioned in one of our works as a sort of drain, but it seems to be very unsatisfactory as a drain. I do not believe the essayist mentioned it as a drain at all.

DR. DANIELS—I intentionally left that out.

DR. SCOTT—For the purpose of drainage, I tried it some time ago, and it disappointed me in two respects: 1, I thought washing it with soap, and then boiling it for a while and dipping it into a solution of bichlorid of mercury would be sufficient to disinfect it. I was doing a Syme's amputation. To my surprise, I had more pus formation than I have had in a wound for many a day, and because of that fact the rest of the operation was watched very closely, everything rendered as aseptic as possible, and I can not help but think that the sepsis was due to imperfection in the horse hair.

2. That brought to my mind this thought, that when considering the use of horse hair we should take notice of the fact that it is subject to certain diseases, and if we are going to use horse hair extensively we will have to pay some attention to that one feature. It no doubt has some advantages. It is non-irritating when aseptic, and it leaves no scars. On that account it certainly has some advantages. Another advantage is that for surgeons who do a great deal of emergency work it is always easily obtained. In the case I speak of, where I used it for drainage in a Syme's amputation, in this instance, I had a beautiful result. I had no drainage tubes with me, and used the hair from my horse's tail which had been properly prepared before I had the operation completed. If the preparation I gave that was uncertain and the cause of suppuration in that case, I do not think it will do to prepare it so hastily as a rule. I have used horse hair in quite a number of circumcisions, and prepared it in those cases very much as the Doctor has suggested by washing it with soap first, then using the other disinfectants. I think the use of it is very limited, and should be, if it is used at all, confined to superficial wounds, particularly wounds of the face. Then we have to look very carefully for the tension which is apt to follow. I believe that one thing is the main bar to its use. The fact is that we have a certain amount of swelling in many of our wounds, and even if we have no swelling at all there is apt to be cutting of the tissues from it.

DR. REGER—Just one word in reference to the preparation of horse hair. I have never depended upon simply washing the hair, but I have sterilized it by superheated steam prior to using it, and I have never found it produce any sepsis whatever.

DR. DANIELS—I am very much gratified at the discussion that my paper has elicited. Dr. Harnden mentioned the point regarding tension. I also mentioned it in the paper. With reference to the preparation of horse hair, I will say that if it is properly and carefully prepared, thoroughly asepticized, the surgeon need not have any fear of sepsis following its use. In superficial wounds, where we can not place as many sutures of silk, catgut or silkworm gut in holding our flaps, we can use horse hair to excellent advantage.

On motion of DR. R. HARVEY REED, the chair appointed Dr. F. H. Peck, Clinton, N. Y., as sergeant-at-arms.

The election of officers having been made the special order of business at this session, on motion of Dr. F. H, Peck, the chairman appointed Dr. F. H. Caldwell, Sanford,

Fla.; Dr. W. H. Meyers, Meyersdale, Pa.; Dr. C. B. Kibler, Corry, Pa., tellers.

On motion of Dr. W. H. Elliott, the Academy proceeded to ballot for officers without nomination.

The ballots for President resulted as follows: C. K. Cole, Helena, Mont, 18; H. J. Maynard, Cheyenne, Wyo., 3; C. M. Daniels, Buffalo, N. Y., 1; C. B. Parker, Cleveland, Ohio, 2; Scattering, 2.

On motion of Dr. F. H. Caldwell, the election of Dr. C. K. Cole was made unanimous.

First ballot for Vice-President: W. H. Elliott, Savannah, Ga., 5; C. B. Parker, Cleveland, Ohio, 1; J. H. Maynard, Cheyenne, Wyo., 1; F. H. Caldwell, Sanford, Fla., 1; R. S. Harnden, Waverly, N. Y., 2; John E. Owens, Chicago, Ill., 4; C. M. Daniels, Buffalo, N. Y., 12; L. E. Lemen, Denver, Colo., 3; F .H. Peck, Clinton, N. Y., 1; R. Harvey Reed, Columbus, Ohio, 1.

There having been no choice, a second ballot was cast which resulted as follows: Dr. W. H. Elliott, Savannah, Ga., 13; Dr. C. M. Daniels, Buffalo, N. Y., 16.

On motion of Dr. W. H. Elliott, the Secretary was instructed to cast the ballot of the Academy for Dr. C. M. Daniels for First Vice-President.

On motion of Dr. L. E. Lemen, the Secretary was instructed to cast the ballot of the Academy for Dr. W. H. Elliott for second Vice-President.

Secretary: The ballot for Secretary resulted as follows: Webb J. Kelly, Galion, Ohio, 21; L. E. Lemen, Denver, Colo., 1; R. Harvey Reed, Columbus, Ohio, 6; A. C. Scott, Temple, Texas, 2. Dr. Webb J. Kelly was declared elected Secretary.

Treasurer: The ballot for Treasurer resulted as follows: F. H. Caldwell, Sanford, Fla., 1; R. Harvey Reed, Columbus, Ohio, 8; John E. Owens, Chicago, Ill., 7; F. H. Peck, Clinton, N. Y., 1; A. C. Scott, Temple, Texas, 1; C. B. Parker, Cleveland, Ohio, 1; C. B. Kibler, Corry, Pa., 9; W. H. Meyers, Meyersdale, Pa., 1.

On motion of Dr. F. H. Caldwell, the Secretary was instructed to cast the ballot of the Academy for Dr. C. B. Kibler for Treasurer.

On motion of Dr. F. H. Caldwell, Dr. R. Harvey Reed, Columbus, Ohio, was elected Editor.

Executive Board: On motion of Dr. Milton Jay, Chief Surgeon, C. & E. I. R'y, Chicago, Ill., the candidate receiving the greatest number of votes would serve for four (4) years, the next highest for three (3) years, the next highest for two (2) years, and the next highest for one (1) year.

The ballot resulted as follows: John E. Owens, Chicago, Ill., 26; L. E. Lemen, Denver, Colo., 17; C. D. Evans, Columbus, Neb., 4; H. J. Maynard, Cheyenne, Wyo., 5; F. H. Caldwell, Sanford, Fla., 9; W. R. Blakeslee, Forest City, Pa., 1; F. H. Peck, Clinton, N. Y., 2; Geo. W. Crile, Cleveland, Ohio, 2; W. L. Buechner, Youngstown, Ohio, 2; C. B. Parker, Cleveland, Ohio. 17; R. S. Harnden, Waverly, N. Y., 14; A. C. Scott, Temple, Texas, 5; Chas. B. Fry, Mattoon, Ill., 1; D. C. Bryant, Omaha, Neb., 1; A. D. Bevan, Chicago, Ill., 1; S. G. Worley, St. Augustine. Fla., 1; J. G. Davis, Chicago, Ill., 1.

[In this ballot each Fellow had the right, if he so desired, to cast a ballot for four different Fellows to serve on the Executive Board.—Ed.]

On motion of Dr. C. K. Cole, Dr. L. E. Lemen and Dr. C. B Parker decided by lot who should serve as three years, Dr. Lemen being fortunate, secured the three-year term.

On motion of Dr. R. S. Harnden, seconded by Dr. R. Harvey Reed, Chicago was selected as the next place of meeting.

On motion of Dr. Chas. B. Fry, the Executive Board was instructed to name the date for the next meeting which they did by selecting the second Thursday, Friday and Saturday of September, 1895.

Dr. George Chaffee, Surgeon, L. I. R'y, Brooklyn, N. Y., being unable to be present and his paper being in the hands of the Secretary, on motion of Dr. R. S. Harnden it was read and referred to the Committee on Publication.

(To be continued.)

Louisville Surgical Society.

This society was the guest of Dr. Jos. M. Mathews at his residence on Monday evening February 11, Dr. H. H. Grant in the chair. In the business meeting Dr. L. S. McMurtry was elected a member of the society, and Dr. J. M. Ray nominated as a candidate for membership to be voted on at the next meeting.

Dr. A. M. Vance showed some incarcerated fat removed from a case of strangulated femoral hernia upon which he had operated an hour previously. The patient was a female 50 years of age, and twenty years previously, when hernia first appeared, Dr. Turner Anderson had tried to persuade the patient to submit to an operation. Two of the patient's sisters also have femoral hernia. The hernia contained omentum and gut; the omentum was adherent, and was removed; gut had been strangulated for sixteen hours, and a great deal of unskillful taxis had been employed by the patient and her friends.

Dr. A. M. Cartledge showed several specimens. One a large multinodular fibroid tumor removed from a negro woman, on February 2. The patient was 46 years of age with the appearance of being 60. Tumor had been noticed for six years. Indications for operation were the severe hemorrhages and the frequent attacks of peritonitis. This case had illustrated how difficult it is to follow hard and fast lines in hysterectomy; it is impossible to follow one operation. There were extensive adhesions on the posterior surface, and owing to the very short neck, there had to be almost a complete extirpation, leaving only a small ring of the cervix. The drainage was through the vagina, the two lower ligatures being drawn down into vagina, the others clipped close. The posterior drainage did admirably in this case, patient making an uninterrupted recovery.

Case 2.—This was the most wretched case of pelvic surgery the speaker had ever seen. History of an abortion two years ago. A septic fever following. Since that time she has fallen from 166 pounds to 130. In January she was seen by Dr. Cecil in an attack of peritonitis, and after treatment symptoms subsided and patient was up one day. She then had a set back, temperature rose to 104 degrees and there was considerable tympany. On January 29 the whole pelvis was one mass, the enlargement feeling like an extra-uterine pregnancy, the tumor rising to the umbilicus and to the right side. The condition was extreme. Immediate operation was decided upon. The peritoneum when cavity was opened looked like an extra-uterine pregnancy because of the black look and venous congestion present. Opaque lymph collections, three to four inches long, looking like a twisted ovarian tumor. The whole mass proved to be an enormous abscess extending over the uterus, and a left side pyosalpinx. The abscess on the right side contained fully a pint of pus. The intestines were cleaned as much as possible but left covered with organized lymph. Cavity was irrigated with many gallons of water, and dependent and upper drainage used. The specimens exhibited showed the adnexa removed. Patient made a good recovery.

Case 3—Illustrates a similar condition to the previous one. It dates from an abortion and tubular disease followed. Last of January during menstrual epoch had severe pain; a chill followed with an intense tension fever, and she had a feeling as if something gave way in her side, this giving some ease; general tympany followed. February 3 she was operated on, a general peritonitis existed, temperature of 103 degrees. The left tube was found resting on the fundus, as large as a wrist. The relief experienced as reported above, was due to the rupture of the tube in the broad ligament. The right tube was the subject of salpingitis. This case was treated with anterior drainage. No trouble followed. In such cases it is impossible to remove the tube without losing pus, after it has ruptured into the broad ligament.

Case 4—Was one of recurrent appendicitis. Operated on in the fifth attack. Each previous one was typical. The temperature was 102 degrees. The appendix had ruptured and the abscess, which was capped down by omentum, contained one ounce of pus. There was pus also in the appendix. On the third day after the operation, the patient had a catarrhal jaundice, but made a good recovery.

Dr. J. S. Chenoweth showed appendix removed from a boy 14 years of age, in the third distinct attack. The last attack there was rigidity of recti muscles; in the twenty-four hours the bowels moved three times, but the tender-

ness and pain increased. The operation was done; two inch incision; appendix was black from pressure and apparently gangrenous to base, and at two points the wall was as thin as paper. There were no adhesions, the appendix lying free in the cavity and stretching up in the incision in the peritoneum. Double ligatures were used, the stump inverted and sewed. On the eighth day there was an intercurrent attack of rheumatism, but in other respects the recovery was uneventful.

Case 2.—Patient 32 years old. No trouble till four months ago. There was vomiting and pain, but these were somewhat relieved when the bowels moved. The temperature was normal; abdomen distended; vomiting; pain over left side, but tenderness only on the right side. Abdomen was thick; a five inch incision was made and adhesions found toward the center of the abdomen, and the appendix was adherent to the ilium by its tip. It contained fifteen or twenty drops of pus. Gauze drain was used; abdomen closed with difficulty owing to tension from tympany. The pain, he explained, was due to the position of the appendix, situated as it was across the abdomen.

Case 3.—Was diagnosed as intestinal obstruction. On the sixth day a mass developed on the right side; pulse 130; temperature 102 degrees following a cold sweat. Pushing through the thin adhesions forward, about one pint of thin pus escaped. The omentum and appendix were tied off. There was an enterolith and two perforations. In this case there was fecal vomiting, and patient was delirious from sepsis. The next day after the operation the patient got out of bed despite the close watching given him. In twenty-four hours the patient's bowels moved and a good recovery was made.

DISCUSSION.

DR. TURNER ANDERSON said that the operation for multiple fibroids was very interesting. It is true that no special technique can be followed. The question of appendicitis is one of the greatest importance. His personal experience he acknowledged was queer. His opinion based on his knowledge of appendicitis in late years amounted to this, that the *operation is justified only when it amounts to the opening of an abscess, when pus can be detected by external evidence.* In the last four months he has seen three cases in which a tumor presented, and which would have been operated on by others, and all have recovered without cutting.

DR. W. C. DUGAN—The multiple fibroid is a beautiful specimen. The pedicle is difficult to deal with oftentimes and it is impossible to tell which operation is to be done before the abdomen is opened. In a case of his own, with a long pedicle, the tumor was easily removed and patient was up on the tenth day. In contrast, in another case the operation as done by Dr. Cartledge was performed, only the posterior drainage was not used, and the patient died from concealed hemorrhage. As to the cause of pain being referred to left side in appendicitis, he believes it is due to pressure on the lumbar plexus and not to the location of the appendix.

Louisville Academy of Medicine.

The regular meeting of the Academy was held Feb. 18, 1895, DR. T. L. MCDERMOTT, President, in the chair.

DR. W. C. DUGAN presented a case of a young man in whom he done Bassini's operation for the radical cure of hernia two years ago. The patient at that time could not wear a truss, there being an undescended testicle. The testicle which was undeveloped was removed, the cord was cut off and the canal sewed up high up. The disposition of the cord is the great question, and if we could do away with the operation on the cord it would be a radical procedure. The only feasible plan is the return of the testicle to the abdominal cavity, and if the testicle is returned and placed in the sub-peritoneal space there would be no trouble in any case, unless there occurs a gonorrheal epididymitis as in a case by Dr. Palmer, and if this procedure is adopted, there will be a radical cure.

DR. E. R. PALMER wished to offer himself as a case of cure of hernia without operative interference. Through youth and early manhood he had been the subject of a right inguinal hernia, and always when laughing or at stool would place his hand so as to retain this hernia; in fact, his hand was on the internal ring nearly constantly, and a cure resulted. As regards the case mentioned by Dr. Dugan, he had a patient who was a monorchid; the left testicle was in the groin, and there was a gonorrheal epididymitis in the retained testicle. It was swollen, and painful, and presented all the radical symptoms of an epididymitis in a descended testicle. Dr. Roberts in consultation advised waiting for subsidence of the acute inflammatory symptoms before recovering the testicle, but symptoms became aggravated and a castration was done. The testicle was the size of a small olive, the globus major and minor were the seat of a severe inflammation. At present the specimen is being prepared for a microscopic examination. In thirty years' experience this was the first case of gonorrheal epididymitis in a monorchid seen by Dr. Palmer.

DR. W. L. RODMAN stated that one of the drawbacks to the removal of an undescended testicle was the probability of having a hernia. He had a case, a cryptorchid; one testicle being in the left inguinal canal, the other in the right external abdominal ring, and on account of the irritation resulting from constant pressure the patient applied for relief. The last case he had operated on for an undescended testicle was promptly followed by a hernia, the cause most likely being on account of the removal of the testicle which acts as a plug, and when removed the canal is larger than usual, and a hernia results.

DR. DUGAN in closing the discussion upon the exhibited case, stated that he always closes up the ring; he slits up the canal to the internal abdominal ring, ties the cord off within the space behind the muscle, and does a Bassini operation.

DR. L. S. MCMURTRY exhibited a specimen of a large uterine fibro-myoma. The patient was 37 years of age. The tumor had been present for three years, and had recently grown rapidly. The indications for operative interference were pressure symptoms and metrorrhagia. She was vomiting daily owing to pressure upon the stomach; there was very frequent urination owing to pressure on the bladder, and there was partial obstruction of the bowel necessitating a daily enema. An interesting point in the operation was the carrying upward of the bladder as the tumor grew, and unless care had been observed it might readily have been cut into. The peritoneum was slipped off, the bladder in this way was let down, the broad ligaments were tied off, and the tumor removed; the pedicle being treated extra-peritoneally with the nœud. There were extensive omental adhesions which had to be tied off separately. The operation lasted forty-two minutes and the patient left the table with a pulse of 78. The tumor, as shown, had grown in the direction of least resistance, the larger nodule had grown in the hollow of the sacrum, conforming to it in shape; the growth filled the pelvic cavity and the greater part of the abdominal cavity. This tumor belongs to that class of uterine fibroids which can only be cured by hysterectomy.

DR. DUGAN stated that the specimen was a beautiful one. He spoke of the attachments to the bladder and the rectum, and emphasized the fact that there is danger of cutting into the bladder, citing an instance of an operator who thought he was observing all precautions and still cut into the bladder, and he had seen in New York in the same operating room two cases in which the bladders had been cut into. It is so easy to let away the bladder and the rectum by making an incision and stripping off the peritoneum as was done by DR. MCMURTRY.

DR. MCMURTRY, in closing, said that in an exhaustive study of fibroids of the uterus, he had thought it strange how universally the profession was misled about fibroids disappearing at the menopause. He can not recall a half dozen in which the tumor had disappeared at the menopause. The most difficult case he had ever operated on the tumor rose to the diaphragm, and the body of the tumor had undergone cystic and purulent degeneration. The patient was obliged to lie on her side constantly, and weighed only ninety pounds when the tumor was removed, yet this patient was 52 years old and the growth first appeared a year before the menopause, and grew most rapidly after that period. It is rare that the menopause brings the desired relief by shrinkage of the tumor; it perhaps does not grow so rapidly, but the idea that they disappear rapidly is an error.

DR. LOUIS FRANK stated that in these cases of fibroids the danger of ligating the uterus is a point to be considered. As a rule, if the tumor is situated in the upper part of the uterus they usually do decrease in size at the menopause but do not disappear. If adhesions are present a more rapid growth can be expected, owing to the blood supply through these adhesions.

The paper of the evening by DR. E. R. PALMER, on "The Vaginal Douche in its Relations to Blennorrhea in the Female," was then read. [It will be published in this JOURNAL later.]

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 86 Fifth Avenue, Chicago.

SATURDAY, MARCH 2, 1895.

THE REGULATION OF DOCTORS' FEES.

Be cunning in the working this, and thy fee is a thousand ducats.—*Much Ado About Nothing.*

A member of the Illinois State Senate whom we may term O'DWYER, has introduced a bill into the Senate regulating the fees of physicians and surgeons. The JOURNAL has not been favored with a copy of this bill, but we learn by the daily press that the bill proposes to fix the maximum fee for any surgical operation at $100. SENATOR O'DWYER is given credit by the veracious chronicler of the press for being the first to bring this subject to the attention of the law.

As usual, however, this statement was evidently made by some one who had not looked into the records on this subject. Professional fees have been regulated by law from perhaps the earliest times.

By the Cincian law, passed in the palmy days of the Roman Republic, lawyers were prohibited from taking fees or presents from those who consulted them; this, in effect, restricted the practice of law to those wealthy citizens who practiced solely from a desire to benefit their fellow men or the State. AUGUSTUS enforced the law by enacting as a penalty for its violation, that such violators should restore fourfold.

Under later Emperors, lawyers were permitted to take fees, and we are told by JUVENAL that pleadings had become venal, that persons of the lowest rank had become lawyers, and that they fomented lawsuits. According to PLINY, all subsequent edicts to restrain the rapacity of the lawyers were artfully eluded.

The precedent thus being set to control "the rapacity of the lawyers," it would be strange if there were not equal restrictions placed upon the doctors. But our profession had always been liberal and indulgent, with a notable exception to be hereafter mentioned, and it was not until the eighth century that we find any laws concerning their fees. In that century a law was passed in Naples giving certain privileges to the universities of the kingdom, and the Salernian and Neapolitan physicians were compelled to make a visit in the city for a *demi-tarenus*, and if called without the city they were not allowed more than three *tareni*. The *tarenus* had a value of about thirty cents.

This was a distinct retrograde from that historic fee of MELAMPUS who flourished 1,380 years B. C. MELAMPUS having cured of insanity, the two daughters of the king, asked for and received a share of the kingdom for himself and his brother BIAS, and "they espoused the two daughters." But low as the fees were in the days of the SCHOOL OF SALERNUM, that faculty would seem to have had difficulty in collecting what they earned, for in a famous exhortation appropriately written in Leonine verse, "On the Ingratitude of Patients," they inveigh against the innate tendency of mankind to neglect the payment of any sum, either large or small, and they urge the physician to demand the fee "while yet the smart remains," or else the ungrateful patient will exclaim that he has paid, "twice paid, the costly bill." But there has never been any fixed price for special and peculiar services, according to ARBUTHNOT. Even in the first century the physician to a prince received about 250 sestertia ($10,090). STERTENIUS complained that he had only a salary of 500 sestertia, when he at the same time had by his private practice alone, 600 sestertia.

But there can not even now be placed a limit to the actual value of services any more than a maximum limitation can be placed on individual knowledge, and we presume even SENATOR O'DWYER would wish the average physician to exceed the knowledge of the ancient surgeons of Scotland, for we are informed that when the surgeons of Edinburgh were incorporated in 1805, it was required of them that they should "rede and rite, know anatomie, nature and complexion of humanis bodie, and lykawayes to know all vaynes of the samyn, that he may make flewbothemie in dew time," and also know the shaving of beards.

Fees will always vary according to the attainments, skill and characteristics of the practitioner and no legislative enactment can change the common custom of centuries. Nor is it possible, like the harlequin of the French comedy, to return the service of the physician. Harlequin having refused to pay the doctor, that worthy brought suit, whereupon being brought before the judge the quondam patient declares that he does not desire the health he had received and proposed to return it, and offered to deliver it into the hands of the judge, provided the doctor

would do the same with the disease, so that each might have his own. This time it was the judge who objected.

If the learned Senator will devote more time to the study of the real abuses from which the people suffer at the hands of monopolies, fostered by the lawyers, he will have less time to give to a profession that already gives nearly or quite one-half of its time to the service of the poor.

Whoever heard of a lawyer who gave any considerable time to the service of impecunious clients with not even a speculative fee in sight? The two law dispensaries, one by the University of Pennsylvania, and one by the Northwestern University, are said to be principally managed by students. The great surgeons, those who command the highest fees from patients able to pay, operate without fee or hope of reward on every person who asks them, provided only that they frankly state their inability to pay. That they are frequently imposed upon, there is no doubt. The same rule exists in the case of the specialists in the various branches of general medicine and surgery. We have thought, therefore, that the best thing about the bill of SENATOR O'DWYER was the impossibility of its passage, by any assemblage outside of a lunatic asylum.

THE KILLING OF DR. DYAS, AND ITS LESSON.

Nowhere in any civilized country is human life so insecure as in the city of Chicago. This assertion, prompted by the recent tragic death of the venerable DR. DYAS, is made advisedly. It is not only in the matter of homicide with criminal intent—of which the JOURNAL may have something to say hereafter—that it is the most blood-guilty city on earth, but in the matter of purposeless and wholly unnecessary homicide by common carriers Chicago has for years maintained a murderous preëminence.

Last year, 1894, no less than 308 human lives were crushed out by the railroads within the city limits, in addition to which there were 46 others killed by the street cars. This frightful total—which, it should be noted, is below the average—takes no account of the maimed and mangled survivors, who, it is estimated from the meager newspaper reports and the police and hospital records, number at least ten to every one killed outright. And of these survivors many are more to be commiserated than those to whom death came mercifully because swiftly.

In the previous year, 462 persons were killed by these common carriers, or nearly one-third the total number of deaths from all forms of violence. Under the caption, "Railroad Slaughter," the Commissioner of Health in his Annual Report, points out that this sacrifice of human life is due to the fact that there are over two thousand miles of railroad tracks within the corporate limits of the city, with more than three thousand street-crossings at grade, over which nearly one thousand, four hundred trains run daily; and adds: "These accidents and the resulting slaughter and disabilities can not, probably, wholly or in any large measure, be obviated without an abandonment of the surface crossings; but it may be noted that one of the main lines east from Chicago, using the block system of signals, claims to have carried 428,000 passengers during the World's Fair period without injury to a single individual." And yet not only does the municipality neglect to enforce the use of the block-signal system on the railroads within the city limits, but it does not even compel the companies to maintain gates or other safeguards at these crossings, nor to employ signal men to warn of the approach of these rapidly-moving engines of death and destruction.

DR. DYAS'S murder differs not one whit from hundreds of others, save in his distinguished personality. Returning to his home in the six-o'clock gloom of a winter evening, after a day spent in philanthropic labors, he stepped from his train, unimpeded by bar or gate, unwarned by voice or signal; was struck down by the engine of a fast express train, and was found some time after, mangled and unconscious, his face crushed into the cinders and ballast of the roadbed, his neck broken, his skull fractured, his left hand ground to pulp by the flying wheels. At the inquest it was shown that there was neither gate, nor signal light, nor alarm bell, nor watchman to warn him or other passengers that a through express train was whirling down the tracks they must cross to reach their homes.

And neither coroner's jury, nor the daily press, nor the civic authority finds anything to do or say in the premises beyond a mild censure of the railroad company for "running the train, which killed the deceased, at a rate of speed entirely too fast to be consistent with the safety of passengers alighting at this station," and for not providing proper platforms at the station.

It should be recorded, however, in justice to the present municipal administration and to the memory of its predecessor, and as well to the railroad companies themselves, that progress is being made toward track elevation—a feat which may, possibly, be accomplished some time in the next century, certainly not much before. Is it too much to ask that, meantime, efficient guards, both mechanical and human, be placed at these surface crossings? Or, in the language of one of the leading dailies of the city, "Shall the grade-crossing slaughter go on, day in and day out, to the utter confusion of the claim that this is a civilized community?"

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

THE FRENCH CABINET.

Our esteemed contemporary, the *British Medical Journal*, in a recent issue points out that "the new French cabinet includes two members of the medical profession, DR. CHAUTEMPS, Minister for the Colonies, and DR. GADAD, Minister of Agriculture. The *Journal* further states that there were "also two members of the medical profession in M. DUPUY'S cabinet, namely, DRS. LOURTIES and VIGER."

In the United States we recall but a single instance of a medical man serving as a cabinet officer, that of DR. OLIVER WOLCOTT, of Connecticut, who was appointed Secretary of the Treasury next succeeding ALEXANDER HAMILTON, Feb. 3, 1795, GENERAL WASHINGTON then being President. PRESIDENT JEFFERSON continued DR. WOLCOTT in office and he held it until May, 1800. It is thus seen that unlike some of his successors, the Father of his Country had no objection to placing important public interests in the hands of a medical man, although it is only fair to mention that our DR. WOLCOTT had served with great distinction in the War of the Revolution and rose to the rank of Brigadier General.

In the Judiciary, one of its ablest members was the late MR. JUSTICE MILLER, of the Supreme Court, who was graduated in medicine at the Transylvania University, and who practiced medicine for nearly twenty years, before studying law and being admitted to the bar.

The legislative branch of the Government shows a great many who were medical men, but not very many who had risen to distinction in the medical profession. DR. SAMUEL LATHAM MITCHELL, editor of the *Medical Repository*, was a notable exception, for he not only made a phenomenally great record in his profession, but also in the Senate, being a Senator from the State of New York from 1804 to 1809. He also served in the House of Representatives from 1801 to 1804, and again from 1810 to 1813.

THE JOURNAL OF THE ASSOCIATION.

We have cause for rejoicing that amid all the dullness of the great financial depression, the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is still gaining new members for the ASSOCIATION, and friends for itself. One enthusiastic friend has paid his subscription in full without discount, to the year 1900. Another member has exerted himself to the extent of securing a number of new members, and all the old members have remained steadfast. The enlargement made last year has allowed the publication of more medical news, and items of general interest to the profession than ever before, and the present outlook is very favorable for a still greater enlargement from and after July next. There is no longer any question of the ability of the ASSOCIATION to own, maintain and publish one of the greatest of weekly medical journals, and its capacity for putting forth creditable medical literature is prodigious.

With these facts before them, it is clearly a patriotic duty of the membership to use every means in their power, to push the good work of organization, in season and out of season, until their journal shall become the greatest medical journal on the habitable globe. We urge every individual member to say a word to his medical friends, in favor of the necessity of standing shoulder to shoulder in the proud and patriotic work of enlisting every worthy member of the American medical profession in the cause of medical organization. Organize! brethren, in solid phalanx for the advancement of American medicine and fall into line under the broad banner of fellowship in the AMERICAN MEDICAL ASSOCIATION! Do not rest until you have secured the adhesion and membership application of every medical man in America.

THE SEMI-CENTENNIAL OF THE AMERICAN MEDICAL ASSOCIATION.

The excellent suggestion of DR. SAMUEL C. BUSEY, quoted in our last issue (page 296), that preparations should be made for a proper celebration of the semi-centennial anniversary of our ASSOCIATION should not be allowed to pass unheeded.

The long and eventful life of the ASSOCIATION, the great wisdom and foresight of its founders, the great advances in professional organization and work due to the persistent efforts of the ASSOCIATION, the solid and material gains to the profession itself, and the foundation of the JOURNAL, afford abundant material for glorification and a jubilee occasion.

It will be therefore in every way fitting that a strong committee be appointed at Baltimore to carry out DR. BUSEY'S suggestion in a manner at once creditable to the ASSOCIATION and gratifying to the whole profession.

CORRESPONDENCE.

Inebriety.

ORAN, MO., Feb. 25, 1895.

To the Editor:—Is a man who has been confined in prison ten or twelve years and who has not drank a drop of liquor in all these years an inebriate? Thousands of drunkards have been imprisoned, and not allowed to drink, and after a number of years released well, so far as physical appearances would indicate. The extreme scientists may assert that such men are diseased because many, so soon as they are released get drunk. If carelessness for public opinion is indicative of disease, then drunkenness is possibly a disease too. The remedy is rather curious but it is very effective. It "almost hardly ever fails." Prisoners are rarely troubled with this malady after the first day in jail. The remedy that cures this malady in so short a time is rarely used in other diseases.

Moral suasion is another effective remedy in drunkenness, but does no good in pneumonia. I used to say that religion

cured more bad cases of inebriety than any other remedy, but my ultra scientific friend scared me off the track, by telling me I was "dogmatic" (whatever that may mean). They tell me that the cases I report as cured are only *apparently* well. I ask them now, how is it with the men who have been *scientifically* cured; are they well or only *apparently* well? There are relapses in both cases; does the relapse prove that no one has been cured? If such a theory is true, there is no way to tell when a case has been cured. If drunkenness is a *disease* and the inebriate is like the patient with typhoid fever, entirely irresponsible for his acts, it is high time that it should be known. There is no earthly use for courts of justice fooling away their time with business that belongs exclusively to the medical profession. There has been a great wrong done to drunkards and doctors too. The drunkard has been punished and the doctor has lost his legitimate fees. Lawyers are responsible for this. They knew all the time that the drunkard was only sick! And instead of sending for the doctor they send for a policeman, have the poor drunkard imprisoned and get a fee for having him released, when the proper thing was to send for a doctor who obtains a fee for his call and prescription and sends the man where he belongs (*to a hospital*) where he can be cured and the hospital doctor gets *his* proper fee.

I think the editor is striking out in the proper direction. If we can convince the people that the inebriate belongs exclusively to us we will soon have plenty of practice and money too. The inebriate has paid the legal profession and courts good wages all the time, and if we can turn this great source of wealth into its proper channel it will be a blessing to the profession. Start a petition to Congress, and have all physicians sign it. We have been imposed upon long enough and will fight for our rights.

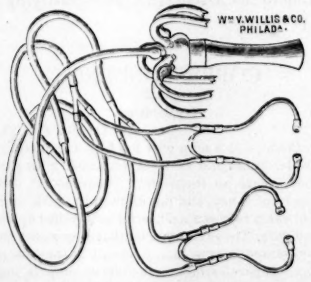
Hurriedly submitted by

W. P. HOWLE, M.D.

A Multiplex Stethoscope.

PHILADELPHIA, Feb. 17, 1895.

To the Editor:—The interesting communication of Dr. A. M. Corwin, in the JOURNAL for Feb. 16, 1895, upon a double binaural stethoscope prompts me to send you the accompanying cut of a multiplex binaural stethoscope, which I have been using with much satisfaction to the class and myself, at the Jefferson Medical College Hospital for some



months. By means of this instrument, which was made at my request by Mr. William Willis, a well-known instrument maker of Philadelphia, sixteen students can listen to the heart sounds or any other physical signs demonstrable by auscultation, if these sounds are not so indistinct as to be heard with difficulty even when using a single instrument. With large classes the difficulty is that only two or three men can listen to the heart sounds, while the description of the case is fresh in their memories, but with this multiplex instrument a large number can listen at once with little inconvenience to the patient. If two instruments are employed, thirty-two men can hear the sounds without interfering with one another; the chest pieces taking up but little room and the tubes being made long enough to extend a considerable distance from the patient. These instruments work satisfactorily in direct proportion to the quality of the materials used in their construction and the care exercised in making the wooden chest piece. Very truly yours,

H. A. HARE, M.D.

Lister's Method.

MILWAUKEE, WIS., Feb. 14, 1895.

To the Editor:—Will you kindly inform me what Lister's method of chromicizing catgut is and oblige

Yours, etc., D. T. SHIMONEK, M.D.

307 Grand Avenue.

ANSWER: Lucas-Championierre, in his work on the "Radical Cure of Hernia," thus gives the original formula of Lister, which Lucas-Championierre still adhered to in 1892:

Olive oil	100
Acid carbolici cryst.	20
Water.	2

M.

Catgut should be immersed in this emulsion not less than six months. Before using the catgut it is soaked for a quarter of an hour in a carbolic acid solution 20 to 100.

Correction—Diagnosis of Leprosy.

PHILADELPHIA, Feb. 25, 1895.

To the Editor:—I beg you will correct two typographical errors in my letter, published in the JOURNAL of February 23, concerning "Leprosy and its Diagnosis." The words "and the analgia" should read erythromelalgia, and "ainhumides" should read ainhumoides. The first error as it stands now, makes the reading incomprehensible and senseless.

Respectfully, LOUIS A. DUHRING, M.D.

MORAL: Write so that it can be read. Had our esteemed correspondent written the original as plainly as he has written this one, he would have had no cause for complaint.—ED.

ASSOCIATION NEWS.

American Medical Association.

OFFICE OF THE PERMANENT SECRETARY.
1400 Pine Street, PHILADELPHIA.

The forty-sixth annual session will be held in Baltimore, Md., on Tuesday, Wednesday, Thursday, and Friday, June 7, 8, 9, 9, and 10, commencing on Tuesday, at 10 A.M.

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies *as are recognized by representation in their respective State societies*, and from the medical department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, county, and district medical society entitled to representation shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more that half that number: *Provided*, however, that the number of delegates for any particular State, Territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the ASSOCIATION."

Members by Application.—Members by application shall consist of such members of the State, county, and district medical societies entitled to representation in this ASSOCIATION as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, $5. They shall have their names upon the

roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the Session of 1888:

That in future, each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of medical societies, *as above designated*, are earnestly requested to forward, *at once*, lists of their delegates.

AMENDMENTS TO THE CONSTITUTION AND BY LAWS.

[Offered in 1892, and laid over from 1893 and 1894.]

Offered by Dr. C. A. L. REED—Amend Article II, Section 1, of the Regulations, by inserting after the words United States, "the Dominion of Canada, Labrador, and Newfoundland," and that such other changes be made in the phraseology of the Regulations and By-Laws as to make the same conform to this contemplated enlarged jurisdiction of the ASSOCIATION."

By DR. I. N. QUIMBY—"That Thursday morning's general session be omitted, and the time be devoted to sectional work."

By DRS. JOHN MORRIS and J. G. KIERNAN—Amend Section 7 of the Constitution, entitled, "the General Business Committee," as follows: "It shall be the future duty of the General Business Committee to make and present the nominations for the officers of the ASSOCIATION and its standing committees, and recommend the time and place for the meeting of the ASSOCIATION.

"The General Business Committee of the ASSOCIATION shall perform all duties hitherto performed by the Committee on Nominations, which is hereby abolished. All sections of the Constitution and By-Laws, or parts thereof, inconsistent with the amendment, are hereby repealed."

By DR. F. F. DOW—Amendment to the Constitution, to be known as Article VIII, entitled: "The Code of Ethics:" "The relations of the physician to the patient, to the public, and to the profession require that he shall be of good moral character, and in his personal and professional conduct without reproach; that he shall avoid pretense and notoriety; that he shall properly qualify himself for professional duty by broad and liberal studies in letters, sciences and arts; that he shall employ reasonable and reputable methods of practice; that he shall respect the laws of the State; that he shall encourage efficient means for the enlightenment of public opinion regarding the responsibilities of medical men and the relation of the citizen to public health, for the cultivation of medical education, for the promotion of the interests, usefulness, and honor of the profession, for the emulation, concerted action, and friendly intercourse among those engaged in it.

"Substituting the Roman numerals IX for VIII.

"All articles, By-Laws, and Codes inconsistent with this amendment are hereby repealed."

By DR. J. H. RAUCH—"That on and after July 1, 1897, no one will be admitted to membership in the AMERICAN MEDICAL ASSOCIATION who has not studied medicine for four years, and attended four annual courses of lectures of at least six months' duration."

By DR. F. F. DOW—Amend By-Law No. XI, relating to the Judicial Council. The second clause of paragraph 3 shall be amended to read as follows: "The decisions of said Council on all matters referred to it by the ASSOCIATION shall be reported at the earliest practicable moment, and shall be final unless revised by the ASSOCIATION."

By DR. A. B. HOSMER—"WHEREAS, The constantly increasing number of papers on general surgical subjects presented each year at the Surgical Section of this ASSOCIATION, the reading and even restricted discussion of which prohibit the introduction of any considerable number of papers on strictly orthopedic subjects, which might not prove of universal interest to the general surgeon; and

WHEREAS, There are already a sufficient and rapidly increasing number of members of the Surgical Section of this ASSOCIATION especially interested in this branch of surgery to warrant it; therefore be it

"*Resolved*, To amend Article II of the By-Laws by the addition, under the heading Sections, and after 12, Physiology and Dietetics, the following; 13, Orthopedic Surgery.

By DR. J. T. PRIESTLEY—"The entire report on Constitution etc., as offered in the report of Dr. Holton at San Francisco."

ADDRESSES.

On General Medicine, by Dr. William E. Quine, Chicago, Ill.; on General Surgery, by Dr. C. A. Wheaton, St. Paul, Minn.; on State Medicine, by Dr. H. D. Holton, Brattleboro, Vt. Committee of Arrangements, Dr. J. J. Chisolm, Chairman, Hotel Stafford, Baltimore, Md.

WILLIAM B. ATKINSON, M.D., Permanent Secretary.

EXTRACTS FROM BY-LAWS.

"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work, and present the same to the Section over which he presides, on the first day of the annual meeting. The reading of such address not to occupy more than forty minutes."—*By-Laws.*

"It shall be the duty of every member of the ASSOCIATION who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a title indicative of its contents and length (not to exceed twenty minutes in reading), to the Secretary of said Section at least one month before the annual meeting at which the paper or report is to be read."—*By-Laws.*

4.—The Publication of Papers and Reports.—"Every paper received by this ASSOCIATION and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the ASSOCIATION, and shall be published and sold for the exclusive benefit of the ASSOCIATION."—*By-Laws.*

OFFICERS OF SECTIONS.

Practice of Medicine.—E. W. Kellogg, corner Mitchell Street and First Avenue, Milwaukee, Wis.; Wm. E. Quine, Secretary, 103 State Street, Chicago, Ill.

Obstetrics and Diseases of Women.—F. H. Martin, Chairman, 34 East Washington Street, Chicago, Ill.; X. O. Werder, Secretary, 514 Penn Avenue, Pittsburg, Pa.

Surgery and Anatomy.—Joseph Ransohoff, Chairman, 296 Walnut Street, Cincinnati, Ohio; Reginald H. Sayre, Secretary, 285 Fifth Avenue, New York.

State Medicine.—Liston H. Montgomery, Chairman, 70 State Street, Chicago, Ill.; Chas. H. Shepard, Secretary, 81 Columbia Heights, Brooklyn, N. Y.

Ophthalmology.—Edward Jackson, Chairman, Denver, Colo.; H. V. Wurdemann, Secretary, 805 Grand Avenue, Milwaukee, Wis.

Laryngology and Otology.—J. F. Fulton, Chairman, 326 Wabasha Street, St. Paul, Minn.; T. J. Gallaher, Secretary, 129 Collins Street, Pittsburg, Pa.

Diseases of Children.—Edward H. Small, Chairman, Penn and Negley Avenues, Pittsburg, Pa.; G. W. McNeil, Secretary, 280 Frankston Avenue, Pittsburg, Pa.

Oral and Dental Surgery.—M. H. Fletcher, Chairman, 65 West Seventh Street, Cincinnati, Ohio; E. S. Talbot, Secretary, 125 State Street, Chicago, Ill.

Neurology and Medical Jurisprudence.—Daniel R. Brower, Chairman, 34 East Washington Street, Chicago, Ill.; T. D. Crothers, Secretary, Walnut Hills Sanitarium, Hartford, Conn.

Dermatology and Syphilography.—A. E. Regensburger, Chairman, San Francisco, Cal.; D. H. Rand, Secretary, Portland, Ore.

Materia Medica and Pharmacy.—W. Helpsey, St. Louis, Chairman; G. F. Hanson, Secretary, 715 Clay Street, San Francisco, Cal.

Physiology and Dietetics.—M. H. Woolsey, Chairman, Oakland, Cal.; C. G. Chaddock, Secretary, 2900 Washington Avenue, St. Louis, Mo.

Section on Gynecology.—Dr. Charles Jacobs, the distinguished gynecologist of Brussels, will attend the meeting of the AMERICAN MEDICAL ASSOCIATION in Baltimore, and, if opportunity offers, will perform his operation of vaginal total extirpation of the uterus and appendages, before such of the members as desire to witness it.

The Baltimore Meeting—Notice to Exhibitors.—The Committee of Arrangements has rented the Cyclorama Building, for the pharmaceutic exhibit in connection with the meeting of the AMERICAN MEDICAL ASSOCIATION. This building is directly across the street from the new Music Hall, in which the meetings of the ASSOCIATION will be held. Intending exhibitors are requested to forward their applications for space at their earliest convenience. Diagrams, rates, etc., will be forwarded upon request. It is desired to make the exhibit of pharmaceutic products, instruments, etc., a special feature of the meeting. The Committee on Exhibits will do

all in its power to satisfy exhibitors, both as regards space conveniences for storage, and rates. At the same time it must be evident to every one that the first applicants will have first choice of position. The diagram of spaces will also show the location of the exhibition building in relation to the meeting hall, and the principal railroad stations.

All correspondence in reference to the exhibits should be addressed to the undersigned.

George H. Rohé, M.D.,
Chairman Committee on Exhibits.

Hotel Stafford, Baltimore, Md.

Section on Dermatology and Syphilography.—List of papers to be read at the next meeting in Baltimore, in June: Chairman's address, and papers on "The Identity of Lupus Vulgaris Erythematous," by Alfred E. Regensburger, San Francisco, Cal.; "Keloid," by A. Ravogli, Cincinnati, Ohio; "The Human Epitrichium and its Relations to some Congenital Skin Diseases," (also Specimens), by A. H. Ohmann-Dumesnil, St. Louis, Mo.; "Adenoma Sebaceum," by W. E. Maxwell, Portland, Ore.; "Syphilis—the Dangers of and how to avoid Them," by A. S. Garnett, Hot Springs, Ark.; "Syphilis of the Pharynx," by A. Ravogli, Cincinnati, Ohio; "Syphilis and Gonorrhea as an Etiologic Factor in Diseases of Women," by H. R. Holmes, Portland, Ore.; "Syphilitic Specific Ulceration of the Rectum," by James P. Tuttle, New York City; "Conceptional Syphilis," by David H. Rand, Portland, Ore.; "Cerebral Syphilis," by Frank P. Norbury, Jacksonville, Ill.; "Hereditary Syphilis," by G. S. Stein, Columbus, Ohio; Edward Martin, Philadelphia, Pa., subject not stated; Jas. Nevins Hyde, Chicago, Ill., (promised) subject not stated; James E. White, Boston, Mass., (promised) subject not stated; W. A. Hardaway, St. Louis, Mo., subject not stated; Louis Franks, Milwaukee, Wis., subject not stated; W. F. Breakey, Ann Arbor, Mich., subject not stated; W. T. Corlett, Cleveland, Ohio, subject not stated; "Exhibition of Protozoa in three cases of Skin Disease," and "Some late and interesting points on the Pathology of Herpes Zoster," by T. E. Gilchrist, Baltimore, Md.; L. Duncan Bulkley, New York City, subject not stated, unless it be "Signs, Diagnosis and Treatment of Sycosis—Differential Diagnosis, Pathology, Local and Internal Treatment."

BOOK NOTICES.

Dose-Book and Manual of Prescription-Writing, with a list of the official drugs and preparations, and also many of the newer remedies now frequently used, with their doses. By E. I. Thornton, M.D., Ph.G. Philadelphia: W. B. Saunders. Chicago: The W. T. Keener Co. Price $1.25.

The author says on page 21 concerning the metric system: "This system of weight, length and capacity has largely come into general use, and its adoption into the United States Pharmacopœia of 1890 makes it obligatory upon the physician to understand and *to be able to translate it into the ordinary apothecaries weights and measures, that he may be able to use it in prescribing.*" (Italics ours.) Such statements are absurd. Why should anybody wish to translate the metric dose into the obsolete British form? There is only one way to use the metric system of dosage, and that is to learn the single dose. One can, if he desire, carry a little dose slip in his visiting list or call book, on which is printed the dose of each drug in metric terms; let him consult it a few times and he will soon become familiar with the dosage of the more common drugs. Rules for conversion are tiresome and frequently lead into making fractional doses that are ridiculous and unnecessary.

The author very properly remarks that the decimal system is easy to learn, as it is as simple as our monetary system, but he might have said that it adds to the confusion to undertake to work out a complicated mathematical problem whenever one wishes to write a prescription. The space devoted to these translations is therefore worse than useless. There is but one thing to remember, that is the single dose, then *multiply the single dose by the number of doses wanted*, point the decimal, by using a line instead of a point, to emphasize it, and the thing is done.

The directions for prescription writing are excellent and the excursion into Latin construction entirely proper, but the examples of prescriptions are all in the old dosage, with a solitary exception on page 147. A large part of the book is devoted to a dose list of the official drugs; both systems are used.

This book has a field, and with alterations in the directions indicated, will be well adapted to meet the necessities of the time.

Doctor Judas; a Portrayal of the Opium Habit. By William Rosser Cobbe. Cl., pp. 320. Chicago: S. C. Griggs & Co. 1895.

The author has named opium, Doctor Judas, because while it cures or saves it betrays, and the whole of the book is devoted to setting forth the evils that the opium habit entails.

"Contention has been made," says the author, "that in the hands of physicians there is safety in its use. This is contrary to the evidence of numbers of former habitués, all of whom save two, had the habit fastened on them by their family doctors. Confirmation of the danger that comes from medical carelessness is had in a trustworthy record of more than twelve hundred cases, upward of 70 per centum of whom owed their serfdom to the same agent. It should be explained that many of those personally known, are themselves physicians who prescribed the drug that fastened the habit upon their souls." . . . .

Whether prepared to indorse *in toto* the author's faith, there can be no harm in obeying the mandate of Mr. Cobbe that "the opiate should never be given for a longer period than a week at the most, and the patient should be kept in absolute ignorance of the nature of the prescription. It is absurd to insist that the physician can shut off the use of it merely by refusing to give it any longer. What does the sick one care for the doctor's interdict, when he can buy enough at the nearest drug store to fix the habit upon a score of persons?"

The book seems to well portray the sad experiences of the unfortunate opium victim, and it is written with much power. The suggestion that there is a concealed advertisement for the one solitary doctor who alone can cure this disease, does not militate against the literary merit of the book. That it holds out a hope to the sufferer is true, but the author and his readers may as well put this thought "in their pipe and smoke it." That is, that in the present enlightened age, no one has a monopoly of knowledge of the means of cure, or of the method of its application.

Charaka Samhita.—The eleventh fasciculus of this ancient Hindu book lies on our table. It is fully as curious, and not less interesting than its predecessors. Much space is given to the dietary in this fasciculus. Fish is not to be eaten with milk, and "the meat of domesticated animals, of those that live in marshy regions, and of those that are aquatic, should never be taken in conjunction with such things as honey, sesame oil, molasses, milk, masha (*Phascolus radiatus*), mulaka (*Raphanus sativs*), tolus stalks, and such paddy as have put forth sprouts."

We shall find, if we strip the matter of its verbiage, that the ancient Hindus possessed a fair idea of digestion, and that they well grouped the different varieties of esculents according to their qualities. The code of health of Salernum, written during the Crusades, is not much nearer modern modes of expression than this most ancient of all medical books known to mankind. The learned Avinash Chandra Kavíratna has conferred great pleasure on medical scholars everywhere by making the Charaka Samhita accessible.

PUBLIC HEALTH.

High Death Rate in Chili.—The heavy rate of mortality in Chili has led the Equitable Life Assurance Society to discontinue a further issue of policies in that republic.

Bovine Tuberculosis in France.—M. Alexandre in a report on the subject of tuberculosis in stables in the Department of the Seine, gives some interesting figures. He found the disease in seventy herds. Of 20,000 cows, only 68 were recognized as tuberculous, a proportion of 3.4 per 1,000. M. Alexandre therefore holds to his opinion that the consumption of the flesh and milk of our domestic animals is not the cause of the terrible mortality from tuberculosis among mankind. It is important, he says, that this once accepted belief be thoroughly rooted out of our minds. He urges, nevertheless, that modifications of the existing laws ought to be made at once, so as to make compulsory the employment of the tuberculin test on all animals of a herd in which a case of tuberculosis has been proved to exist.

Tuberculosis in Germany.—It is generally admitted that the mortality from pulmonary tuberculosis increases yearly, especially in large cities; but recent statistics collected by Professor Hollinger, of Munich (*Semaine Medicale*) seem to demolish this theory—at least so far as the principal German cities are concerned. For example, the mortality from tuberculosis in Munich, which was 40.8 per 10,000 inhabitants in 1883, had decreased to 30.8 in 1893; in Berlin the diminution has been 9 per 10,000 (25.7 in 1893 against 34.7 in 1883). A corresponding diminution has been shown for Frankfort, Dresden, Stuttgart and other cities. It is probable that there has been a similar reduction in other countries, for in Vienna during the same space of time the mortality from tuberculosis has been lowered from 69.29 to 47 per 10,000. This lowered mortality is undoubtedly due to the hygienic measures, individual and general, taken in regard to tuberculous patients. This is not the sole reason, however, for the deaths began to decrease before any vigorous prophylactic measures were instituted. Part of this decrease, then, should be attributed to the cleansing of the cities.

An Antitoxin Plant at Brooklyn.—By authority of the Mayor, a grant of $10,000 has been given to the Brooklyn Department of Health for the establishment of a serum plant. This sum, it is believed will enable the bacteriologists of the Department to continue for one year with a twenty-horse stable. The authorities of the city were induced to take this action largely by reason of the representation of the medical societies and profession. The motive leading to this outlay has been the high prices that are still ruling and must, for a considerable period, continue to rule in the market for foreign serum; these prices being practically prohibitive to the poor and to institutions that have no funds for extraordinary remedial expenditures. At $3.50 per bottle for the imported serum, the impecunious must do without, unless there are created local plants for the gratuitous distribution of the remedy. At Brooklyn a beginning has already been made with three horses. One of these latter is soon to be tested. It is reported that some few of the horses owned by the New York City Board of Health have already yielded a product fully equal to the strongest of the imported serums. The clinical results from the same quarter are reported as continuing favorable. There is now being constructed a chart for the purpose of graphically setting forth the decreased mortality by diphtheria that has followed the increased use of the antitoxin. There is no longer any doubt in the minds of the experts that the ratio of mortality has progressively fallen in proportion as the quantity of serum has become more and more accessible.

Mortality of New York State in 1894.—The Empire State had a total loss of 118,195 lives in the year 1894. This reported loss, plus an estimated deferred return of about 3,800 deaths, yields a death rate of 18.75 per 1,000 living. This is the lowest rate that has been recorded since 1889. There was a daily average of 324 deaths, as against 340 in 1893. The mortality under five years was 35.1 per cent. of the total; a point that had not been reached before in five years. Zymotic mortality was 18.6 per cent. of the total, or slightly above the average of the last five years. Diphtheria and croup caused 6,592 deaths or 96 per 100,000 population—the highest rate since 1889. This heightened prevalence and mortality was limited to the maritime district of the State, in which is included the cities of New York and Brooklyn. Typhoid fever caused 1,640 deaths; scarlet fever 1,227; measles 900; whooping cough 1,020. Smallpox caused only 27 deaths in the State at large; but 281 deaths occurred in the metropolitan center, total 308; only 60 deaths by that cause occurred in the last six months. Diarrheal diseases presented a high mortality, 8,956 deaths; malarial diseases 422; and cancer 3,305. Consumption caused 12,824 deaths, while acute respiratory affections were charged with 15,885. The mortality from consumption was equivalent to 108.46 out of every 1,000 deaths, an increase as compared with the totals for 1892 and 1893; a decrease as compared with the preceding years of that quinquennium. There were 3,000 deaths charged against epidemic influenza, or la grippe; which manifested its fifth recurrence, beginning in December, 1893, and lasting about four months. The epidemic was less widespread and less fatal than in certain former years, when as many at 5,000 and 8,000 deaths were referred thereto. The total of deaths cited as "unclassified," 15,310, is an enormously high unknown quantity, when a comparison of causes is in question. Old age is credited with 5,500 deaths, nearly; deaths by violence and accidents nearly the same total. The estimated population for the State is not given in the printed "Summary" recently distributed, but from the Fourteenth Annual Report of the Board of Health, we learn that the population was held to be 6,689,000, of which 3,350,600 dwelt in the maritime district.

Sero-therapy and Sero-prophylaxis.—MM. Le Breton and Magdelaine give an account in *Le Bulletin Medical* of their experiences with the diphtheria antitoxin in the Paris Hospital for Sick Children. The diphtheria pavilion is divided into two rooms, one for boys and one for girls, each of which has a small room for isolation. As all the children were placed before diagnosis in the same contaminated atmosphere the following routine was adopted: Every child admitted to the pavilion was given an injection of 10 to 20 c.c. of serum according to its condition or the probability of its having diphtheria; this was done as soon as the child was seen either by the authors or by one of the attachés of the Pasteur Institute. The injection was thus made before any bacteriologic diagnosis. If the tube, sown immediately, showed cultures of the Löffler bacillus on the second day, the injection marked the beginning of the curative treatment. In the contrary case, it was purely prophylactic and children thus protected were allowed to remain the length of time necessary for their cure and no case of contagion occurred in the hospital. No local treatment was used with the serum save irrigation with a weak Labarraque's solution (50 c.c. to 1,000), which has no therapeutic value and only served to detach the loosened membrane. General tonic treatment was instituted, both for the disease and for complications. There were 330 children admitted, 258 of whom had diphtheria. Of these 258 only 31 died—12 per 100, and if we omit eight cases dying in the first twenty-four hours the mortality is only 10.8 per cent. Tracheotomy was performed twenty-four times with nine deaths—37.5 per cent. Intubation was performed in fifty-one cases of diphtheria with fourteen deaths—27.45 per cent. Among these fourteen

cases seven deaths occurred in less than twenty-four hours, so that there results, for serum-therapy and intubation, a mortality of only 18.1 per cent. This death rate is very low especially when the period covered is considered—the months of October, November and December—and the further fact that many of the cases were very grave, 147 out of the 258 having mixed infections and these furnished 19 out of the 31 deaths. The untoward effects of the serum were those previously noticed; in the 1,200 injections a slight redness developed at the site, but only one suppurated; some were followed by eruptions, (70 cases); in 140 cases albuminuria developed. The authors however, conclude that on account of the elevation in temperature and possible renal complications, that the serum should no longer be used as a preventive in children exposed to diphtheria.

Epidemic Diseases.—Notwithstanding an increasing prevalence of influenza, the general death rate is not materially affected by this disease, except as it occurs as a complication of pneumonia. Its incidence seems to be chiefly along the North Atlantic—New York and Washington being especially afflicted; but nowhere in this country has it attained the proportions which cable dispatches report in Great Britain, where it is estimated that about 15 per cent. of the population are sufferers from the malady. The well-informed London correspondent of the New York *Sun* reports that among those who are laid up with the distemper are Lord Roseberry, Mr. Balfour, Mr. Henry Irving, Lord Dunraven, forty-five members of the House of Commons, 20 to 40 per cent. of the staffs of the principal banks, and one-third of the judges of the high courts. The postal and telegraph services are seriously affected by the prostration of hundreds of employes by the disease. He adds that, "Mr. Walter Besant yesterday told of a golden wedding reception which was attended by one hundred guests a week ago. Ninety of these are now in bed with influenza. The number was increased to-day (February 24) to ninety-one, for Mr. Besant himself has been stricken." Dr. Andrew H. Smith, in the *Medical Record*, notes the changes of type that have occurred in the disease from year to year since 1889. At first, the respiratory conditions prevailed almost exclusively, but presently an abdominal form became frequent, and then cases were observed in which the nervous system seemed to bear the brunt of the attack. Before the close of the second epidemic these several types—respiratory, abdominal and nervous—were pretty generally recognized, and were sufficiently distinct to serve roughly as a basis of classification. By the third year the severity of the disease had greatly abated and the types became less characteristic. During the latter part of last year's epidemic, a purely tracheal cough became a leading feature. This year the same cough is present, but, in addition to it, there is a positive sense of soreness and discomfort in the trachea. Another peculiarity, more marked this year than before, is the occurrence of subnormal temperature after the subsidence of the febrile stage, suggesting the possibility of a production of secondary toxic material, having an action upon the heat centers directly opposite to that of the poison which was present at the beginning of the attack. This subnormal temperature may persist for a week or more, during which time there is no other evidence of disease, unless it be a feeling of lassitude, with more or less mental depression, and perhaps an excessive amount of phosphates in the urine. Dr. Smith urges that "the importance of avoiding exposure during convalescence can not be too strenuously enforced. In every case in which serious complications have arisen under my observation, they were due to lack of care in this respect. Too great haste to resume business or pleasure-seeking is responsible for most of the fatality of the grippe."

The recent severe weather has enormously increased the death rate from pneumonia and bronchitis, and among the aged. Diphtheria is declining in frequency and many observers note a lessening grade of severity. So marked has been the decline in some localities—New York for example—that the Boston *Medical and Surgical Journal* suggests a causal relation between this phenomenon and the increasing use of the antitoxin. Such relation is more than doubtful, however, at least in this country.

The smallpox wave appears to be moving southward; in St. Louis and other localities in the Mississippi valley, although official reports are wholly wanting, there is, undoubtedly, a serious increase in the prevalence of the disease. It is declining in Chicago, Milwaukee and Detroit; in the former city there were 20 new cases reported during the week ended February 27, making a total of 85 new cases during the month up to that date—total treated 202; discharged recovered 96, died 24, death rate 11.6 per cent. In Milwaukee on the 25th ult., there were thirty cases remaining—ten in hospital and twenty in homes; eight new cases reported during the week.

Prevention of Blindness.—In New Jersey the following law has been favorably considered by the committees in both Houses, and it is hoped it will become a law:

SENATE NO. 91, STATE OF NEW JERSEY.

Introduced Feb. 4, 1895, by Mr. Williams. Referred to the Committee on Miscellaneous Business.

An act for the prevention of blindness in the State of New Jersey.

SECTION 1.—Be it enacted by the Senate and General Assembly of the State of New Jersey, That should one or both eyes of an infant become inflamed, swollen or reddened, or show any unnatural discharge at any time within two weeks after its birth, and no legally qualified practitioner of medicine be in attendance upon the infant at the time, it shall be the duty of the midwife or nurse, attendant or relative having charge of such infant to report in writing, within six hours, to the local Board of Health of the city, township or other municipality in which the parents of the infant reside.

SEC. 2.—And be it enacted, That the said Board of Health shall direct the parents or persons having charge of such infant suffering from such inflammation, swelling, redness or unnatural discharge of the eye to immediately place it in charge of a legally qualified practitioner of medicine, or in charge of the physician of the city, township or other municipality if unable to pay for medical services.

SEC. 3.—And be it enacted, That every local Board of Health in the State of New Jersey shall furnish a copy of this act to every legally qualified practitioner of medicine, and to each person who is known to act as midwife or nurse, in the city, township or other municipality for which such Board of Health is appointed; and the Secretary of State shall cause a sufficient number of copies of this act to be printed, and to supply the same to such officers for distribution.

SEC. 4.—And be it enacted, That any failure to comply with the provisions of this act shall be punishable by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both, upon conviction under prosecution proceedings to be brought by any local Board of Health.

SEC. 5.—And be it enacted, That this act shall take effect and be in force on the first day of May, one thousand eight hundred and ninety-five.

The wording of this act is rather unusual, in that it imposes a penalty upon parents for the neglect of their children. This is apparently rather harsh, as it is naturally supposed that parents would do all in their power without the fear of any such law. The practical fact is, however, that this form of cruelty to children too often passes unnoticed and inasmuch as a large number of these individuals made blind by such neglect subsequently become charges upon the State, it is but right the State should recognize the danger and impose penalty upon parents, as well as nurses who are too ignorant or too negligent to take the precautions necessary. It is hoped that the bill will pass in its present form and it would be well if as strong a law could be enacted in other States.

NECROLOGY.

LOUIS CONRAD, M.D., of Brooklyn, N. Y., died January 25, aged 37 years. He was a native of New Jersey, born of German parents, and had been in the practice of medicine since 1887, in which year he was graduated from the medical department of the New York University. His entire professional life had been passed in Brooklyn. His final illness was the result of an acute pulmonary tuberculosis that made its presence known about four months ago.

HENRY V. BYRNE, M.D., of Brooklyn, N.Y., February 17, the youngest son of Dr. John Byrne, the well-known gynecic surgeon of St. Mary's Hospital, has died at the early age of 24 years. He was graduated from the University of Vermont Medical Department in the class of 1892. He was a young physician of rare qualities and promise; his untimely death was due to pulmonary tuberculosis of about one year's duration.

FERDINAND WILLIAM OSTRANDER, M.D., the oldest physician of Brooklyn, died January 29, in consequence of an attack of influenza with certain of the complications incident to age. He was a native of New York City, born there over ninety years ago. He received, in 1828, his license to practice from the New York County Medical Society, which at that time had a legal status affording many rights and privileges not now possessed by the county organizations. He was for sixty-two years a resident of Brooklyn, with a very considerable practice among the old Long Island families. Not a few members of the Ostrander family have followed honorably the profession of medicine. The subject of this notice has surviving him a son who is a physician in the same city. Dr. Ostrander retired from active practice about ten years since. In 1835, when an epidemic of cholera afflicted the western end of Long Island, he was one of the staff of physicians officially engaged to care for the sick of the village of Brooklyn; it is recorded that there were ninety cases, with thirty-five deaths. He was a member of his county medical society over sixty years.

ROBERT GRAFTON NOLAN, M.D., of Bergen Point, New Jersey, died, aged 38 years, Jan. 23, 1895. He took his medical degree in 1877 at the University of Vermont. His fatal malady was pneumonia. He leaves a widow and one child.

J. R. LESTER, M.D., of Lebanon, Tenn., February 14.—James Nichols, M.D., of Bradford, Pa., February 16.—S. P. Phillips, M.D., of Ashland, Ohio, February 9, age 41.—A. L. Bronmessette, M.D., of Stafford Springs, Va., February 17.—W. H. Trigg, M.D., of Booneville, Mo., February 21.—C. H. Smith, M.D., of Nyack, N. Y., February 16.—G. S. Comine, M.D., Miller's Falls, Mass., February 19.—O. H. Menees, M.D., of Nashville, Tenn., February 17.—H. L. N. Dubois, M.D., of Portsmouth, N. H., February 24.—M. D. Gordon, M.D., of Huey, Ill., February 23.

SELECTIONS.

Etiology of Endometritis in Pregnancy.—A writer in the *Weiner Klinische Rundschau* had previously at Berlin reported two cases of endometritis of the decidua, in which he had succeeded in demonstrating in the decidua numerous diplococci, at times plainly intracellular, but at that time no cultures were attempted. Recently one of these two patients again came under his observation at the Policlinic of Professor Veit. The decidua area was thickened to two and one-half to three cm., intensely yellow and still remained *in situ*. Histologically the process appeared chiefly as a small-celled infiltration. Among these cells were found a multitude of bacilli, at times joined in longer strings, which were cultivated on agar-agar and gelatin. These bacilli are small rods, rounded at both ends, and of moderate thickness; they show a great similarity to the bacterium coli commune, but are distinguished from it by their behavior under Gram's method. On account of the circumstance that the demonstration of these microörganisms occurred twice in the same patient, the writer believes that he can ascribe to them a prominent rôle in the etiology of endometritis.

Peri- and Para-Metritis.—In the *Centralblatt für Gynäkologie* a compilation has been made from forty-four cases of all those inflammatory processes of the uterus and its appendages which so frequently result from childbirth, abortion or gonorrhea. Several cases of salpingitis may have been included on account of difficulty of diagnosis. In old exudates a mere puncture was generally sufficient; in acute processes with rapid collection of pus a more extended incision, many times also drainage. Of the forty-four cases thirty-four recovered, nine were improved and one died of tuberculosis of uterus and peritonitis, twenty-three were incised, nineteen punctured, and twice there was spontaneous rupture into the vagina. The contents were generally pus, at times a bloody serum or clear serum. The quantity varied from one c.c to one liter. Length of treatment four days to five months.

Tuberculosis of Iris.—Dr. Hans Adler has exhibited a case of tuberculosis of the right iris in a young woman. This affection, he states, is marked by a number of grayish-white nodules, from the size of a poppy seed to that of millet, which lie principally in the ligamentum pectinatum. This condition may be differentiated from gummata in that the nodules are grayish-red in the latter, while sarcoma is not multiple. The history will usually aid in diagnosis.—*Wein. Klin. Rundschau.*

MISCELLANY.

Seasonable.—*Les Nouveaux Remedes* offers the following seasonable suggestion of an application for chilblains: Tincture of digitalis, 6 grams; thymol, 3 grams; alcohol, 150 grams; glycerin, 150 grams. Mix. To be rubbed on the affected part.

Bellevue Hospital College Alumni.—A newly organized alumni association of the Bellevue Hospital Medical College, on February 20, held its first anniversary meeting and banquet, under the presidency of Dr. George A. Evans. At an election then held Dr. R. M. Wyckoff was chosen to succeed Dr. Evans as President for 1895–96.

Bequests for Portland Charities.—The will of the late Ira Farrington, of Portland, Me., gives sums varying from $2,000 to $40,000 to certain named public charities. Of the residuary estate, the two-thirds part goes to the Maine Eye and Ear Infirmary at Portland, while the remaining third is devised to the Public Library.

The Doctor in Fiction.—The *Lancet* is fond of quoting the favorable views that writers of fiction are pleased, at times, to take concerning the profession of medicine. The following is one such view, appearing in an American serial publication recently: "Our doctors have to live, of course, but they are kind-hearted as a rule, and take more interest in setting their patients on their feet than in pursuing people for their pay."

Hippopyrrhin.—Dr. Badour, of Palaiseau, a retired French army surgeon, suggests "hippopyrrhin" as an appropriate name for the diphtheria antitoxin—compounding the word from ἵππος, a horse, and πυρρός red, in recognition of the equine and of Dr. Roux (*roux*, red). This may be, as the *British Medical Journal* says, a dainty device of philological ingenuity, in which "is enshrined a double-barreled compliment." But has Dr. Badour taken into the account one Behring of Berlin, who seems to have some claim to recognition in the distribution of prenominal compliments?

New York Bacteriologic Bureau.—One of the recent appointees at the New York Health Board's laboratory for the production of the antitoxin of diphtheria is Dr. Anna Williams. She is a medical graduate, and an assistant in the pathologic laboratory of the New York Medical College for Women. Having early taken a predilection for research in

pathology, she took special courses at Leipsic, and elsewhere in Germany, in lines that have fortunately fitted her for advanced bacterioscopic work. She was admitted to study in the bacteriologic bureau of the Board of Health after a careful examination, during which she readily demonstrated a marked ability in the identification of bacteria. Dr. Williams was one of the first of the eligible candidates to be proposed for a place in the Bureau of Dr. Biggs, when it was determined to increase the staff for the purposes of producing the new antitoxin. Her age is quoted at 25 years. The moderate salary of $100 per month is allowed for her expert services.

Malakin as an Antipyretic and Antirheumatic.—Dr. Robert Abernethy is strongly impressed with the results of malakin in cases of pyrexia of rheumatic and other origin. He details (*Edinburgh Medical Journal* February, 1895) a striking instance of frequent, aggravated, pyrexial outbursts in a case of acute rheumatism, promptly relieved by 15 grain doses of malakin thrice daily, after more than three months of unsuccessful routine with salicin, sulphate of quinin, ice-packs, etc. He has since given it, after other antipyretics had failed, in a good many cases of pyrexia due to various causes; among others, a case of rheumatic fever, with advanced mitral disease, in which it controlled the symptoms admirably without apparently causing any considerable depression; also in two cases of croupous pneumonia in children of 9 and 11 respectively, in which it seemed to have a beneficial effect, both making remarkably good and speedy recoveries. [See also this JOURNAL for February 9.]

Physical Degeneracy in Prostitutes.—In his "Etiology of Osseous Deformities," Dr. E. S. Talbot traces the association of physical degeneration with the criminal classes and has made some interesting observations on the anomalies found in prostitutes, showing that these women are a class in themselves, presenting marks of arrest of development and physical and mental degeneracy. The cases examined were not selected, but were taken as they occurred in hospital from those not disfigured by syphilis. In 150 prostitutes thus examined the following abnormalities were noted:

Malformation of the head	62
Development of occipital protuberance	62
Very receding forehead	18
Hydrocephalic	15
Various anomalies of the face, prognathism, etc	64
Ogival palatine vault	38
Congenital division of palate	14
Vicious implantation of teeth	62
Hutchinson's and Parrott's teeth	19
Absence of lateral incisors	10
Badly margined ears (Morel)	16
Defective ears, deformed, etc	47
Anomalies of extremities	8
Local asphyxia	2

The comparison of these cases with educated women and illiterate peasants is interesting; 82 per cent. of the prostitutes present more than a single anomaly, while among educated women there is found only 2 per cent., and in the peasant class 14 per cent.

Liquor Potassæ in Chloral Poisoning.—In a brief paper in the *Glasgow Medical Journal* (February, 1895), Dr. John Dougall points out that whatever facts or theories there may be regarding the *modus operandi* of the hynotic and anesthetic action of chloral, there can be no doubt about its chemic composition and affinities, and, in particular, that it is almost at once decomposed, at and above 60 degrees F., outside the body, by an alcoholic solution of KHO, and, somewhat less quickly, by an aqueous solution of the alkali. Therefore, assuming that a person has swallowed a poisonous dose of chloral—say 80 grains, as was done inadvertently by the late lamented Professor Tyndall—and that there could with safety be given, as a chemic antidote, 27 grains of KHO—this amount being the quantity by weight required to decompose 80 grains of chloral, there are strong *a priori* grounds for assuming that in about fifteen minutes the chloral in his system would be entirely changed into formate of potassium and chloroform, or at least, that so much of it would be decomposed that the residue would be harmless. As a matter of practice Dr. Dougall would give, in such a case as Professor Tyndall's, 220 minims of liquor potassæ—equal to 14 grains of KHO—highly diluted in warm milk, gruel or barley water, in two doses, an hour apart. If this were given before the patient was too far gone the amount of chloral in the system would soon be reduced to a quantity quite within the bounds of safety for an adult, providing there is no heart trouble.

The Army Medical School, Netley, England.—The sixty-ninth session of this school was brought to a close on January 31, when twelve surgeons on probation were successful in passing the examination for the British, and fourteen for the Indian Medical Service. The address to the young officers was delivered by W. H. Russell, LLD., the veteran war correspondent of the *London Times*, who achieved prominence in the literary world during the Crimean War and who has since accompanied troops in no fewer than nine campaigns. He referred at length to the difficulties experienced in the Crimea by the Medical Department of the Army, mentioning the names of many medical officers who were crushed under a weight of obloquy for what they could not help. They could not make bricks without straw. They could not save the lives of those who were perishing with hunger, cold, want of medicine, clothing and everything needful to keep them alive. At that time the Medical Department was not responsible for the arrangements for the cure of the sick and wounded. Now, all this is changed. He complimented the Director General, Sir William McKinnon, the Indian veteran, Sir Joseph Fayrer, and Sir Thomas Longmore, the only survivor of those present at the inauguration of the Army Medical School by Sidney Herbert in 1860. Surgeon-General Maclean also addressed the young officers wishing them a successful, happy, honorable and useful career.

Observations on Tertiary Syphilis.—In a paper read before the Fourth German Dermatological Congress, Ehlers, of Copenhagen, presented statistics of 6,816 cases of syphilis under treatment from 1864 to 1881 in the Communal Hospital of Copenhagen. In the résumé given in *Ann. de Derm. et Syph.* these statistics show that tertiary lesions are more common in the first four years. As regards the infectiousness of tertiary phenomena Ehlers thinks that we must revise our opinions. Gummata of the genital organs are especially suspicious, and he cites a case: Patient infected and treated for three years; married; two healthy children were born and his wife was not infected; eight years after the infection the patient had an ulcerating gumma on the penis, which healed badly; two weeks later his wife had a maculo-papular eruption. Ehlers makes the following summary of his observations: 1. Tertiary symptoms were observed in from 12.4 to 22 per cent. of all syphilitics treated in the hospital. 2. Tertiary as well as secondary symptoms are 10 per cent. more frequent in the male; females are not so subject to tertiary symptoms. 3. Tertiary lesions are observed principally on the skin—1,385 times on the skin alone, 139 times on skin and bone; next come ulcerative and destructive processes of the tongue, palate, nose, air-passages—390 cases; in the third place come the nervous lesions—261 cases—which are, in reality, by far the most frequent, but often escape the notice of the syphilographer; if there be added to this group, tabes dorsalis, general paralysis and syphilitic encephalopathy the number of nervous lesions will be increased to 463; lesions of connective tissue occupy the fourth place in point of frequency; the frequency of syphilis in the internal organs can not be determined. 4. The most common cause of tertiary manifestations

is the absence of mercurial treatment or its imperfect and defective exhibition; in 107 cases—7.12 per cent.—it was not possible to learn the previous treatment; in 665 cases—43.64 per cent.—no mercurials had been given; in 606 cases—40.38 per cent.—the primary lesion alone had been treated with mercury; and in 133 cases—6.86 per cent.—mercury was given only during one or two exacerbations. 5. Tertiary lesions are observed to be most frequent during the first four years, and the maximum in the first two years, after infection; they are rare beyond twenty years, but in some cases have been noted as late as forty years after infection

The Opium Inebriety of the Chinese.—An educated Chinaman, the Rev. Poon Chu, had occasion to address a San Francisco audience on the comparative evils of alcohol and opium as intoxicants. He stated that he had found one striking difference between the effects of the opium vice among his countrymen and those produced among Americans by alcoholic intemperance: "When the Chinese opium smoker comes home he does not abuse his children and kick his wife; his wife kicks him." This happy hit "brought down the house," and was widely quoted as a specimen of Chinese wit.

Mithridates' Antidotes.—An anonymous writer in Dr. Thomas M. Dolan's always interesting *Provincial Medical Journal*—the article is probably by the erudite editor himself—tells of an hour or two spent with an old tome, "Culpeper: The English Physician Enlarged, "which he picked up to while away the watch of a critical case. He has this to say of Culpeper and Culpeper's defense of Mithridates—him surnamed "the Great," feared of the Romans and fabled to have fortified himself against poisons by feeding upon them: "Mithridates, the Pontian king, has lately been much in evidence. Dry-as-dusts have raked up his name, to claim for him the credit of forestalling Pasteur, Roux, and Behring, in immunizing against disease; so I read with some interest Culpeper's description of the Mithridatic antidote. 'The antidote used by Mithridates, every morning fasting, to secure himself against infection was this: Take twenty leaves of rue, a little salt, a couple of walnuts, and a couple of figs, beaten together into a mess with twenty juniper berries.' Culpeper waxeth somewhat indignant. 'What an infamy is cast upon the ashes of Mithridates (or Methridates as the Augustins read his name) by unworthy people. They that deserve no good report themselves, love to give none to others. That renowned King of Pontius fortified his body by poison against poison. *He casts out Devils by Beelzebub, Prince of Devils.* What a sot he is that knows not that if he had accustomed his body to cold poisons, hot poisons would have dispatched him; on the contrary, if not, corrosions would have done it. The whole world is at the present time beholden to him for his studies in physic, and he that useth the quantity but of an hazel nut of that receipt every morning, to which his name is adjoined, shall to admiration preserve his body in health, if he do but consider that rue is an herb of the Sun and under Leo, and gather it and the rest accordingly.'"

NOTE:—The editor of this JOURNAL has in his collection the following books of "Nich. Culpeper, gentleman, student in Physick and Astrology:"

1. Two Books of Physick: I. Medicaments for the Poor, or Physick for the common people. II. Health for the Rich and Poor, by Diet without Physick, by Nich. Culpeper. Student in Physick and Astrology. Also Culpeper's Ghost is hereto added; being a book of Truth, Wit and Mirth. London: Printed by Peter Cole in Leaden-Hall and are to be sold at his shop, at the sign of the Printing Press in Cornhil, neer the Royal Exchange, 1656.

2. The English Physician Enlarged: with Three Hundred, Sixty and Nine Medicines made of English Herbs that were not in any impression until this. The Epistle will inform you how to know this impression from any other. (&c, &c.) London: Printed by Peter Cole, 1656.

3. Pharmacopœia Londonensis, or the London Dispensatory, further adorned by the studies and collections of the fellows now living of the said Colledge. London: Printed for George Sawbridge at the Bible on Ludgate Hill 1675.

Hospital Notes.

SETON HOSPITAL, at Spuyten Duyvil, N. Y., which was opened New Year's Day, has already given treatment to between twenty and thirty patients. Almost all of them are of a class for which the charity was instituted, namely, consumptives in the early stages of the disease. Dr. J. West Roosevelt, the physician in charge, seeks to afford the patients exceptionally favorable sanitary conditions, diet and treatment. Four endowments of beds have been received. It is non-sectarian.——Under the will of the late John P. Rolfe, of Brooklyn, the City Hospital of that place will receive a donation of $10,000. A like amount was devised to the Old Men's Home.——Under the will of the late Henry Saltonstall, the Massachusetts General Hospital receives a bequest of $10,000 as a general expense endowment. The Boston Eye and Ear Hospital falls heir to an equal sum, while $20,000 is set apart for charities to be selected by the trustees named in the will.——The Episcopal Hospital, Philadelphia, has received the sum of $20,000, under the last will and testament of the late Lemuel Coffin, of that city. ——Plans have been prepared for a five-story addition to the Roosevelt Hospital, New York, to cost $125,000.—— Luther C. Derr, M.D., has been appointed Superintendent of the Montrose Hospital at Frederick, Md.

Louisville Notes.

KENTUCKY PHYSICIANS.—There are in Kentucky at present 2,814 registered physicians and a few others who are practicing medicine illegally. The law requires all physicians to register their certificates with the county clerk, and those who fail to do so are liable to punishment by fine. The diploma of the applicant must be passed upon by the county referee appointed by the State Board of Health. No unregistered physician can legally collect a bill.

SCARLET FEVER.—There is at present an epidemic of scarlet fever at Williamsburg, Ky. The primary and intermediate departments of the schools have been closed. Already two deaths have resulted.

HOSPITALS FOR INSANE.—The improvements at the Eastern Lunatic Asylum, Lexington, Ky., are almost completed. The last Legislature authorized the expenditure of $30,000 for this purpose. The improvements include the erection of a new building for the accommodation of the officers of the asylum and a new ballroom. The new building is a pressed brick structure of three stories and basement, is connected with the main building by a tunnel, and on the level with the first floor is a glass covered hallway running from the new to the old building. The old offices which were large old-fashioned rooms, will be transformed into private rooms and wards, as will also the ballroom and in this way the capacity will be increased 150 or 160. It is hoped that enough money will be saved from the regular appropriation to equip the institution with its own electric light plant within the next year. There are at present at the asylum 795 patients, 410 of which are males, 104 are black, one-half of that number are men. This is the third oldest lunatic asylum in America, having been established in 1824.

CENTRAL KENTUCKY LUNATIC ASYLUM.—The annual report of the Central Kentucky Lunatic Asylum has just been published. The report of Superintendent Pusey shows that the number of patients in the asylum on Sept. 30, 1894, was 1,003. The total receipts for the year were $150,699.90; the expenditures $148,767.01, leaving a balance in the treasury October 1, of $1,932.89. The question of relief from the sewage disposal of the institution is a grave one, considerable

money having been spent in the last year in defending suits for damages and abatement of nuisance. Colonel Hering, of New York, has decided that chemic sedimentation was the only practical method of purifying the water before it left the asylum grounds. A plant for this purpose would cost about $6,000, and when completed $5 a day to operate it. $65,000 is soon to be expended in the erection of new buildings provided for by the last Legislature.

HYDROPHOBIA.—Hydrophobia has been almost epidemic in Wayne County for nearly two months past. It originated with a dog near Frazer, Ky., in the eastern part of the county, and after biting a son of J. S. Shadoan, came in the direction of Monticello, snapping at every obstacle in its way, when it was finally killed. Since then, twenty-five or thirty head of stock have died with hydrophobia. The son of Mr. Shadoan was taken to Chicago for treatment.

MORTALITY.—In all there were seventy-eight deaths in the city during the past week. Pneumonia still heads the list with twenty-four, consumption eight, appendicitis one, typhoid fever three. There were forty-nine male and twenty-nine female, fifty-six white and twenty-two colored. Five of the deaths occurred at the City Hospital.

Washington Notes.

MEDICAL SOCIETY OF THE DISTRICT.—At the meeting of the society held on the 20th inst., Dr. James Kerr reported a case of gunshot wound of the liver in a child of 13 years, with recovery after suture of the organ. The continuous silk suture was used. The child was exhibited to the society. Dr. Kinyoun, U. S. M.-H. Service, suggested the use of sterilized bone pins with figure-of-eight suture as used in hare-lip, and cited some experiments made on rabbits to prove the value of the method. Dr. Lamb presented a uterus with sloughing perforation, resulting from abortion, a uterus showing primary tuberculosis and a case of secondary tuberculosis of the Fallopian tubes.

TO INVESTIGATE POLLUTION OF WATER SUPPLIES.—Speaker Crisp has presented to the House a memorial from Major Charles Smart of the Surgeon-General's office, United States Army, communicating a resolution of the American Health Association in favor of the bill introduced in the House by Mr. Bartholdt, of Missouri, authorizing the appointment of a commission to investigate the pollution of water supplies where such pollution affects the sanitary condition of the people of more than one State.

HEALTH OFFICER'S REPORT.—The report of the Health Officer for the week ended February 16 is as follows: Number of deaths (still-births not included): White, 61; colored, 53; total, 113; death rate per 1,000 per annum, 15,86; white, 38.46; colored, 19.91; total, 22.91. There was a slight increase in the death rate during last week as shown by the reports received at the Health Department. From 17.9 it raised to 19.9. That this was due to the intensely cold weather, which averaged 3 degrees below the freezing point, is evident from the large increase in the number of fatal cases from pneumonia and congestion of the lungs. The mortality from these amounted to twenty-seven as against fifteen for the previous week. There was no case of death from typhoid fever, nor any of the malarial fevers, and but one death from diphtheria occurred. No new cases of smallpox have been reported and those who have been under treatment for this malady are doing well. The city is comparatively free from other dangerous contagious diseases.

HEALTH DEPARTMENT RULING.—No pay will be allowed for clothing and property destroyed by order of the Health Department. The attorney for the District rendered an opinion to the Commissioners regarding the claims of Messrs. George L. Anderson and Charles E. Williams, for $74.15 and $68.50 respectively, being the values given by them of their wearing apparel, etc., alleged to have been destroyed, by direction of the Health Department, to prevent the spread of smallpox. The health regulations in regard to smallpox provide, among other things, that the inspector detailed to attend to the removal of smallpox patients shall fumigate and disinfect the dwellings where smallpox cases occur, and he shall see that the clothing is properly disinfected, packed up, carried safely to the almshouse and destroyed, and that he shall keep an account of the clothes or furniture which has been destroyed, the probable value of the same and the names of the parties to whom they belong and give a receipt for the same. The law does not provide for payment under any circumstances, but only for an inventory of "the clothes or furniture of poor persons, which has been destroyed." The destruction by the Health Office of the furniture and wearing apparel of these claimants was for the benefit of the public in order to prevent the spread of an infectious disease. In such cases there is no common law liability. The destruction of clothing and furniture, says the attorney, to prevent the spread of smallpox is like the destruction of houses to prevent the spread of conflagration, and is not a taking of private property for public uses, for which compensation is to be made. He says that these claimants are not within the class of "poor persons" designated in the statute. The destruction of the articles for which claim is made appears to have been made at the direction of the claimants themselves, according to the report. The attorney is of the opinion that the claims are not well founded at law, and should be refused.

APPROPRIATION NOT AGREED TO.—The Conference Committee has decided to strike out the clause appropriating $1,400 for a deputy coroner for the District and $600 for an assistant chemist for the Health Department. Both should have been provided for as the officers are very necessary to the city.

A STATUE OF DR. GROSS.—The House passed the Senate bill granting permission to the American Surgical Association and the Alumni Association of the Jefferson Medical College to erect a statue to the memory of Samuel D. Gross in this city. The bill appropriates $1,500 for a pedestal.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Feb. 16, 1895, to Feb. 21, 1895.

First Lieut. HENRY C. FISHER, Asst. Surgeon, extension of leave of absence granted is further extended one month.

Capt. HENRY P. BIRMINGHAM, Asst. Surgeon, is relieved from duty at Ft. Grant, Ariz. Ter., and ordered to Ft. Trumbull, Conn., for duty, relieving Capt. FREEMAN V. WALKER, Asst. Surgeon. Capt. WALKER, on being thus relieved, will proceed to Ft. Grant, Ariz., and report for duty at that post.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Feb. 23, 1895.

P. A. Surgeon CLEMENT BIDDLE, ordered to Naval Hospital, Chelsea, Mass.

P. A. Surgeon L. W. ATLEE, ordered to Naval Hospital, New York, N. Y.

P. A. Surgeon F. A. HESLER, ordered before Retiring Board.

LETTERS RECEIVED

Baum, F., Kansas City, Kan., (2); Bullington, T. A., Louisville, Ky.; Brashear, B. B., Cleveland, Ohio; Bernd, Henry & Co., St. Louis, Mo.; Burroughs, H. S., Pittsburg, Pa.

Cincinnati Hospital Library, Cincinnati, Ohio; Cutler, John A., New York City; Clarke, A. P., Boston, Mass., (2); Crosby, W. E., New York City; Coggeshall, L., Chicago, Ill.; Chambers, J. H. & Co., St. Louis, Mo.; Crawford, W. F., Stanford, Pa.; Cantrell, G. M. D., Little Rock, Ark.; Corr, A. C., Carlinville, Ill.; Cross, E., Monterey, Mexico.

Sievet Mfg. Co., New York City; Damrell & Upham, Boston, Mass.; Drysen & Pfeiffer, New York City.

Eads, S. O., Beaver Crossing, Neb.

Frick, Robert J., Louisville, Ky.

Hummel, A. L., Philadelphia, Pa.; Hudson, W. G., New York City; Hunt, W. L., Bangor, Maine; Hoyt, A. S., New York City; Heuel, Emil, New York City.

Kuehn, Rolando, Bluefields, Nicaragua.

Lower, H. J., Irwin, Ohio; Lea Bros. & Co., Philadelphia, Pa.

Moore's Newspaper Subscription Agency, Brockport, N. Y.; Medical Novelty Co., New York City; Miller, C. N., San Francisco, Cal.; Mishoff, J. D., Milwaukee, Wis.

O'Neill, A., Lubeck, W. Va.; Orton, J. G., Binghamton, N. Y.

Petty, C. W., Hartford, Conn.; Pantagraph Ptg. and Sty. Co., Bloomington, Ill.; Packard, J. H., Philadelphia, Pa.; Publishers' Collection Agency, St. Paul, Minn.

Rational Chemical Co., St. Louis, Mo.; Runnion, Dr., Arcadia, Kan.

Stearns, F. & Co., Detroit, Mich.; Smith, John Day, Minneapolis, Minn.; St. Peter State Hospital, St. Peter, Minn.

Thompson, C. M., Elk Rapids, Mich.; The Sanitarium, Battle Creek, Mich.; Todd, F. W., Lamanda Park, Cal.; Thomason, H. D., Albion, Mich.; Telegraphers, The Publishing Co., Vinton, Iowa.

Vose, J. A. Advertising Co., New York City; Vail, A. M., Rock Rapids, Iowa; Vaughan, W. R., Nesbitt, Texas.

Wiggin, W. H. Jr. & Co., Chicago, Ill.; Whitman, B. T., Chicago, Ill.; Wishart, J. S., Toronto, Canada; Westervelt, J. D., Alice, Texas; Westermann, B. & Co., New York City, (2).

Zinser, S. L., Minonk, Ill.